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ABSTRACT

A project was conducted to develop an interagency consortium for Alaska for the purpose of annually identifying and updating the preservice training needs for Alaska vocational educational personnel and to prepare a report on the recommendations from the consortium to be issued to institutions of higher education offering one or more preservice majors in vocational education. The project consisted of four phases: (1) investigate vocational education teacher competencies from related research and assessments, (2) design assessment instrument for pilot testing and reaction, (3) establish panel of reactors to evaluate and rate competencies and recommend changes, and (4) recommend assessment for future use. One of the findings was that there is a high degree of agreement with respect to the individual competencies rated by panel members. A significant percentage (94%) was rated 3.0 or above on a Likert-type scale (5=critical; 1=not needed). Panel reactors rated an overall high need with respect to individual occupational services areas within vocational education for the next five years. Highest general cluster categories rated by panel members included instructional planning, evaluation, management, and implementation. (The teacher competencies assessment instrument and the results of the preservice teachers competencies are appended.) (LRA)

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ALASKAN VOCATIONAL EDUCATION
PRE-SERVICE TEACHER COMPETENCIES:
A PRELIMINARY STUDY

Prepared for the
Alaska Department of Education

By

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for
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The Institute would also like to acknowledge the individual contributions of John Warden. Mr. Warden served as a primary consultant to the design of the assessment instrument and the written narrative of this report.

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GLOSSARY OF TERMS

Competency - means the acquisition of a skill to perform a specific task.

Performance-Based Teacher Education - means an approach to teacher preparation in which the teacher is required to demonstrate essential teaching tasks in an actual teaching situation. Actual performance of the tasks ensured that the teacher has not only the knowledge required but also the ability to perform the competencies that are essential to successful teaching.

Pre-Service Competencies - mean those tasks which are required of a beginning teacher. They are distinguished from in-service competencies which are associated with on-the-job development. Acqusition of pre-service competencies is most often associated with degree programs at institutions of higher education or other human development organizations.

Vocational Education - means organized educational programs which are directly related to the preparation of individuals for paid or unpaid employment, or for additional preparation for a career requiring other than baccalaureate or advanced degree; for purposes of this paragraph, the term "organized education program" means only:

(a) instruction directly related to the occupation or occupations for which the students are in training or instruction necessary for students to benefit from such training; and
(b) the acquisition, maintenance, and repair of instructional supplies, teaching aids and equipment.

Vocational Instruction - means instruction which is designed upon its completion to prepare individuals for employment in a specific occupation or cluster of closely related occupations in an occupational field, and which is especially and particularly suited to the needs of those engaged in or preparing to engage in such occupation or occupations. Such instruction may include:

(a) Classroom instruction;
(b) Classroom related field, shop, and laboratory work;
(c) Programs providing occupational work experiences, including cooperative education and related instructional aspects of apprenticeship programs;
(d) Remedial programs which are designed to enable individuals to profit from instruction related to the occupation or occupations for which they are being trained by correcting whatever educational deficiencies or handicaps prevent them from benefitting from such instruction; and
(e) Activities of vocational student organizations which are an integral part of the vocation instruction.

THE NEED

Spaziani (1973) undertook an empirical investigation to estimate the number of fulltime vocational teachers needed for Alaska's secondary schools during the school years of 1973 to 1978. He arrived at these estimates from data provided by principals of secondary schools or those who had major responsibility for planning the total vocational program development at the local school district level. Among his findings was a total need for 740 fulltime vocational education secondary school teachers. Of this 740, it was estimated that 440 would be new personnel that must be added.

In a later report, (Spaziani, 1974, p.2) he noted the problems associated with professional staff development in vocational education in Alaska. In focusing attention upon the economic flucuation in Alaska, he stated...

> "In periods of rapid expansion, economic acceleration demands crash programs of personnel recruitment who learn more or less effectively on-the-job. There is little help from in-service teacher education programs. Pre-service programs during the stable phase are only large enough to fill the needs of personnel attrition. Staff recruitment is most difficult during boom periods when teaching is at the lease competitive to attract the best qualified at existing salaries or working conditions.
>
> The cyclical nature of vocational education has been a primary deterrent in developing adequate staffing programs. During more stable times, vocational administrators are combatting pressures for elimination of their programs rather than improving staff competencies.
>
> Another problem in staff development is the increasing rate of technical obsolescence in the teacher. Change is a fact of life for the vocational educator, but the rate of change has accelerated in all fields."

He further indicated that if professional performance is to be expected from teachers on the job, then it must be a primary goal of a vocational education teacher preparatory program to provide relevant opportunities for the development of these competencies. Spaziani also

noted the importance of actual field-based settings in order to provide relevant opportunities for competencies to be developed. Among the problems noted in the report include: (1) the increasing rate of technical obsolescence due to accelerated change in all fields, (2) loss of time and expense involved in travel, (3) lack of relevance in non-field oriented education and training program, and, (4) the need to include non-professional/non-technical classroom personnel in teacher education training.

On February 7-8, 1977 educators from around the state met to identify problems facing education in Alaska. The workshop was planned and conducted by the Alaska Center for Staff Development under a grant from the Alaska State Department of Education. Participants represented a relatively broad spectrum of individuals directly or indirectly concerned with education in Alaska. Participatns were asked to identify what they perceived to be the major problems facing education in Alaska both now and within the next five (5) years. Among the statements generated by the group included the following:

> Teacher certification will continue to have a strong influence on programs as will the supply and distribution of professional personnel. While there will be an oversupply of qualified persons in some urban areas, there will be shortages in the rural areas. For this reason, among others, new teacher education programs are needed (both pre-service and in-service) to meet rural program needs.
>
> As an outcome of the "Hootch Case", and increasing emphasis on equal opportunity and human rights, there will be increased demands on education for new programs and program development funds. All this may intensify the important current problem of requiring programs, although no resources exist to develop and implement the programs. With increasing emphasis on (1) fiscal and program accountability by the Alaska Legislature, (2) projected demands for new programs and increased cost, and (3) the tendency for Alaskan educators to take a defensive posture, the problem of providing leadership for education will persist.

Pertinent research in education for Alaska is lacking in many areas. In many cases where such research does exist, it is not being adequately disseminated in a form useful to practitioners.

Most high school graduates from Alaska lack the ability to survive as an independent person who can handle money, budget, complete income tax, acquire insurance, etc.

Students in small rural vocational programs do not emerge with minimum job entry skills.

School and community personnel do not know competencies needed by rural high school students for survival in the society they will enter.

Many young people are unable to cope with the changing environment or with a change in their environment.

Because of the limited numbers of teachers in rural education programs, it is difficult to achieve depth of subject matter.

With respect to teacher preparation and professional development, a high emphasis was placed upon rural education and vocational education. The importance of increased services to rural areas in a decentralized manner was also noted.

Evidence from other studies and reports support the growing need for vocational education instructional programs. Griffiths et al. (1976) study of the Alaskan Native school dropout over a five-year period indicated an increase in the number of students who planned to undertake vocational training--from 10.5 (1971) to 27.1 per cent (1976). Students also indicated a desire to have a steady job with security, to have pride in doing a good job, to help other people and to develop specific skills.

The Alaskan Five-Year Plan for Vocational Education (FY '78-82) outlined a series of related problems with respect to vocational education in Alaska. Under Section B "Where We Are" the plan noted concern in a variety of areas.

Leadership Development

In Alaska, insufficient number of LEA personnel have the necessary training and experience in assessing local needs and organizing and developing vocational education programs to meet those needs.

Maintenance of Current Programs

Vocational education programs at all levels are in various stages of development. There is a need to further develop those that are potentially effective in preparing individuals for paid or unpaid employment or for additional preparation for a career, and to expand those programs that have been proven effective.

Administration

Strong, State leadership is required to establish standards for and assist in the development of and evaluate vocational educational programs.

Personnel Development

There is a continuting need for a systematic approach to rural and urban teacher certification and program accreditation standards, to the training of new vocational education teachers, to the training and retraining of those persons already working in the field of vocational education program development, implementation and evaluation.

The State Plan also continues to project a rather large increase in the number of vocational occupations (see Appendices A-9) and the related training needs. For example, the Plan has noted a training deficit of over 2,500 people needed in trades and industry in 1978 alone.

Two guiding philosophies that served as the foundation of the Plan included an emphasis upon meeting the individual student's total needs and the developing skilled manpower relative to the needs of the community, state, and nation. Thus, the teacher education of vocational education must focus upon both the humanistic concerns and competency skill levels associated with various occupations.

Among the stated objectives for the coming five years in vocational education are the following which are directly related to personnel development of secondary vocational education teachers.

> Establish a planned, systematic program of in-service training for all vocational education personnel by 1979 (A 25.1).
>
> Update and/or revise current standards for vocational teacher credentialing and program accreditation (A 29.1).
>
> Provide staff development training and technical assistance in conducting program evaluation at the local level to at least 50 vocational education personnel each year (A 20.3).

The specific objective and accompanying list of activities with respect to pre-service training of vocational education teachers includes the following:

OBJECTIVE	ACTIVITIES
Provide a planned, systematic program for the pre-service training of vocational education teachers (PI 1.29).	Establish and inter-agency consortium on vocational teacher preparation with representatives of the ADOE, Commission on Post-secondary Education and LEAs to identify and update each year the pre-service training needs of prospective Alaska vocational education personnel, and to make recommendations to institutions offering teacher programs (PI 1.2.1). Develop standards for vocational education personnel preparation programs and submit them to the State Board for adoption; coordinate the development of the standards with TECAB (Teacher Education Certification Advisory Board) (PI 1.2.2).

This report is an outgrowth of that state plan, addressing itself to the first activity listed under that plan, with implications for the

second activity as well.

PARAMETERS OF THE STUDY

> "Establish an interagency consortium on vocational teacher preparation with representatives of the ADOE, commission on post-secondary education and LEAs to identify and update each year the pre-service training needs of prospective Alaskan vocational education personnel, and to make recommendations to institutions offering teacher preparation programs."

Vocational Educational State Plan ('78-'82)

The RFP (Request for Proposal) written by the Department of Education and funded to The Northern Institute included the following objectives:

1. Develop an interagency consortium for Alaska for the purpose of annually identifying and updating the pre-service training needs for Alaska vocational education personnel.
2. Prepare a report on the recommendations from the consortium to be issued to institutions of higher education offering one or more pre-service majors in vocational education.

Among the parameters established for this study are...

1. The focus will be limited to only pre-service competencies needed for beginning vocational education teachers during their first year of employment in Alaska. No attempt will be made to address in-service needs of vocational education teachers in general.
2. The focus will be limited to the identification of generic competencies with respect to vocational education instruction rather than the specific technical skills associated with any particular occupational field.

3. The focus will be upon the design of the instrument to identify the pre-service competencies of vocational education teachers as well as on a recommended set of follow-up procedures for further input.
4. The focus will be to determine the reliability and validity of the assessment instrument through a study of related research and reactions gained from a panel of Alaskan educators.
5. The focus will be limited to reactions from a selected panel of reactors rather than all vocational education personnel in general.

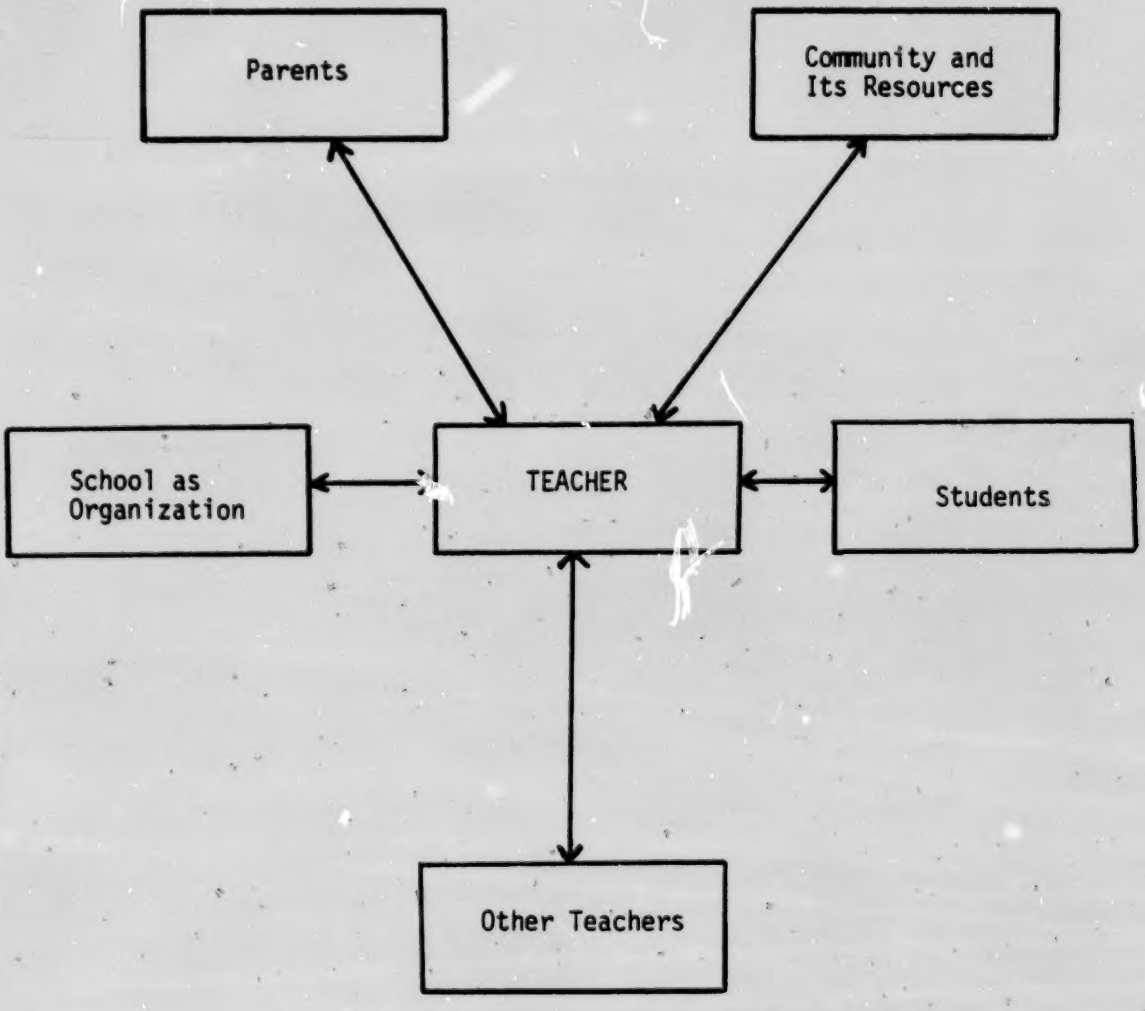
DESIGN OF THE STUDY

An earlier study of teacher competencies for vocational educators in Alaska (Spaziani, 1974, p.3) provides a justification for the present study reported herein. According to the author, the overall model rests on the assumption that teacher behaviors significantly affect student outcomes and that teacher behaviors can be developed by a carefully planned educational and training process. It is additionally assumed that...

1. Desirable teacher outcomes can be prescribed by properly-constructed program objectives.
2. The attainment of these outcomes is dependent upon the interaction between the teacher and the planned (educational) environment.
3. Acceptable teacher behaviors are dependent upon the possession of a suitable set of competencies.
4. The task of the teacher education program is to see that the teacher is equipped with the necessary pattern of competencies.

The focus areas of the teacher are also assumed to include those listed in the graph below. This "universe of the teacher" provides a framework for determining what competencies are directed toward whom. Most of the specific competencies are located within the classroom context between student and teacher. However, the effective vocational education teacher must also address these other population groups.

The Universe of the Teacher - FIGURE #1



Project Phases

The project included the following phases of development which contributed to the accomplishment of the two specific objectives outlined earlier.

Phase I Research. This included reviewing past assessments undertaken in Alaska with respect to vocational education teacher competencies; developing contacts with various outside research and development centers in vocational education which might provide an additional nationwide perspective on vocational education teacher competencies; reviewing past documents in-house with respect to teacher education and competency tests; and obtaining reports on reliability and validity tests of previous assessment instruments utilized in vocational education.

Phase II. Design of Assessment Instrument. This phase included the actual construction of the pilot instrument utilizing input derived from previous vocational teacher education competency assessments; phone conversations with vocational educational education research and development centers; and internal development by the staff of The Northern Institute.

The vocational teacher competencies identified by the Center for Vocational Education at The Ohio State University served as a starting point for the development of the assessment instrument. Work at The Ohio State University identified 384 performance elements which were then combined to form 100 performance-based teacher education modules. These modules were then field tested and revised by the Center for Vocational Education. The Center then proceeded with the development of a variety of support

materials for instructional and evaluative purposes based upon this set of modules. Utilizing the 100 modules as a base line for the assessment instrument in Alaska meant building off this excellent development effort.

Additional testing and use of those materials was undertaken by the Minnesota Research and Development Center which proved the need for several new competency areas (see Related Studies). One report suggested that future studies might want to include items representing the areas of (a) human relations, (b) philosophy of vocational education, (c) individualized instructors and (d) chemical dependency. Review by The Northern Institute staff also recommended changes to reflect cultural differences, avoid sex-role stereotyping, and other changes related to Alaskan conditions. As a result, the following competencies were added to the initially pilot assessment instrument.

Item Number	Focus Area
9	Provide for students with cultural and ethnic differences
10	Avoid sex-role stereotyping
18	Provide adapted instruction for students with physical and mental handicaps.
20	Evaluate and revise student instructional materials
45	Construct appropriate tests of student performance
60	Manage student behaviors appropriately

66	Assist students in value clarification
67	Recognize and assist students with chemical dependency and/ or drug problems
75	Conduct parent-teacher conferences
86	Assess one's self in terms of attitude and interpersonal relationships
101	Establish and apply procedures to comply with federal and state regulations for education of handicapped and gifted students

Other modifications included:

Combining items C-21 through C-27, C-29 into one major subheading on No. 42 (Present information by using various audio-visual aids). Combining items G-3 through G-6 into one major subheading on No. 70 (Inform the school and community about the vocational education program by using a variety of informational techniques). Various individual wording changes (e.g. "instructional execution" became "instructional implementation").

Both an initial draft and a revised edition were developed before distribution to a panel of experts.

Phase III. Panel of Reactors Input. A panel of educators from Alaska and elsewhere was established to assist in the evaluation of the assessment instrument as well as rate the individual teacher competencies needed for beginning teachers. Among the

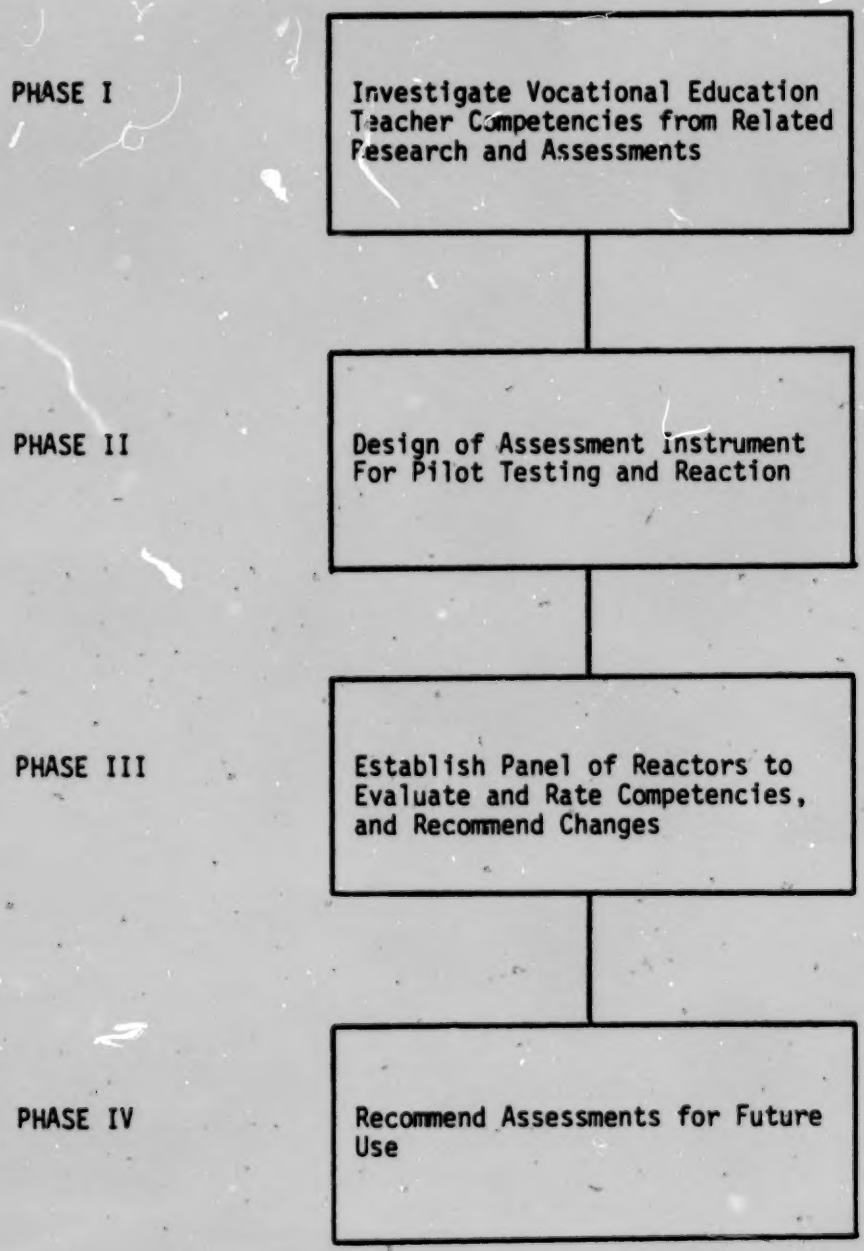
criteria chosen as important for the selection of individual panel members included: (1) a demonstrated interest in vocational education at the professional level, (2) experience and knowledge of vocational teacher education competencies, (3) knowledge of the Alaskan vocational education conditions, (4) evidence of a wider (than Alaska) view, i.e. national awareness, generic teacher competencies, pre-service training, (5) recognized or known for past endeavors to foster improvement in vocational education, (6) represents a significant special interest perspective and (7) willing to serve on a consortium reaction panel.

Individuals selected and listed in the front of this report met one or more of these criteria and chose to serve as a reactor. Input and reactions were thus received from individuals associated with the following organizations: a private trade union, local education agency, Department of Education, institutions of higher education, national vocational education research center, and a skill center in Alaska. Specific roles represented on the panel included: new vocational education teachers in both rural and urban areas; a high school principal, assistant superintendent, director of program and development, superintendent, faculty members from various institutions of higher education and administrators from state educational agencies. Specific comments and suggestions by that panel are listed elsewhere within this report (see appendices A-3).

Phase IV Revision of Assessment and Report Findings. This phase included a suggested further revision of the assessment instrument, reviewing all panel

reactor comments for inclusion within the study report, tabulating the individual competency statement rating and meeting with The Northern Institute staff to make further recommendations and suggestions. A final report was then prepared and distributed to all panel reactors plus the Department of Education and institutions of higher education in Alaska.

PROJECT PHASES


PHASE I
Investigate Vocational Education Teacher Competencies from Related Research and Assessments
PHASE II
Design of Assessment Instrument For Pilot Testing and Reaction
PHASE III
Establish Panel of Reactors to Evaluate and Rate Competencies, and Recommend Changes
PHASE IV
Recommend Assessments for Future Use

RELATED STUDIES

Listed below are a variety of research studies related to vocational education teacher competencies. These studies served as a foundation for the design of the study presented herein. Reporting these findings will hopefully expand the awareness of the reader's knowledge as well.

Spaziani and Courtney (1973)

In 1973 Spaziani and Courtney undertook a study to determine the common professional education competencies needed by Alaska's vocational secondary school teachers. Among the objectives of their study were the following:

1. To determine the common professional education competencies needed by Alaska's secondary school vocational teachers.
2. To determine if significant differences exist in vocational teachers throughout the state as characterized by (a) geographical regions (Northern, Southcentral, Southeastern), (b) urban and rural location, and (c) educational discipline.
3. To determine the extent of commonality among individual vocational teachers included in the study.
4. To formulate implications to be considered in the development of curricular content, performance objectives, and teaching strategies for the preparation of vocational teachers.
5. To identify the methods recommended by respondents for preparing individuals to perform each competency included in the study.

The report noted that significant research by Cotrell (1970), Courtney and Halfin (1969), and Halfin and Courtney (1970) reflected the need for flexibility in vocational teacher education programs as well as the necessity to identify the unique aspects of each discipline area

of vocational teacher education and what is common to two or more areas. The suggested base for vocational teacher curriculum planning was to search for a common core of training experiences leading to the development of competent professional educators. This in turn could lead to a curriculum planning centered on identifying the elements of the common core.

The initial step in the development of the competency questionnaire was based on research by Cotrell (1970) and Courtney and Halfin (1969). The instrument developed by these two studies provided the basis for the items which were included in the Alaska study. The format was revised and made suitable to Alaska's unique secondary system. Each item was checked to determine its appropriateness to both rural and urban secondary settings in Alaska and items which appeared to be redundant or inappropriate were deleted. Cotrell's instrument was drawn upon heavily as the initial questionnaire was completed. The developed questionnaire contained fifty (50) competencies.

Respondents, who included secondary level vocational instructors throughout Alaska, were asked to evaluate the importance of each competency in relation to their job. Each of the fifty (50) competencies was assigned a score based upon the following Likert-type scale:

1. My work as a vocational instructor requires no proficiency with this competency.
2. My work as a vocational education instructor requires slight proficiency with this competency.
3. My work as a vocational education instructor requires moderate proficiency with this competency.

4. My work as a vocational education instructor requires considerable proficiency with this competency.

5. My work as a vocational education instructor requires complete proficiency with this competency.

In addition to the Likert-type scale, a three-column check list was included in order to solicit the second variable, the best method of teacher preparation. Teacher preparation choices were as follows:

1. Proficiency for this competency could best be prepared by formal coursework.

2. Proficiency for this competency would best be prepared by on-the-job experience.

3. Proficiency for this competency could best be prepared by a combination of formal coursework and on-the-job experience.

The population for the study represented secondary level vocational education instructors in the three regions of Alaska, and from rural and urban schools. A sample of 177 responses provided the data for drawing the conclusions. Their research uncovered the top mean competency clusters to include the following in rank order.

1. Direct or conduct student learning activities in simulation, shops, labs, field trips or supervised study.

2. Advance your professional competencies through self-analysis, acquiring new skills or updating old ones, and reading professional literature.

3. Evaluate the quality and effectiveness of instruction.

4. Control student behavior and cope with mini-crisis in the classroom or shop.

5. Evaluate a vocational program assessing its ability to meet student needs.

Among their findings were (Spaziani and Courtney, 1973, pp. 40-43)...

"Because there was decided evidence that regional differences do

not exist for vocational teachers in Alaska, it is appropriate to suggest that a single statewide teacher preparation program be developed to serve the entire state.

Mean scores for the fifty competencies (clusters) ranged from a high of 4.158 to a low of 3.079. The presence of such high overall means verify the importance levels inherent for those competencies selected for use in the study. Further, the indications point to the competencies as necessary elements which should be included in future preparation programs for Alaskan vocational teachers."

They also found that a combination of both coursework and on-the-job experience reflected the best method of preparing Alaska vocational education teachers.

Spaziani (1973)

In addition, Spaziani undertook a related research study reported in 1973. The study was entitled "A Five-year Needs Assessment For Vocational Education Instructors in Alaska's Secondary Schools," and the scope of the study included:

1. To provide a more efficient basis for determining fulltime vocational teacher education needs within Alaska.
2. To provide a basis for determining vocational teacher training needs within the University of Alaska in terms of quantity and occupational specialties.
3. As viewed from local conditions and outlooks to predict a range of demand for fulltime vocational instructors for Alaska's secondary schools for school years 1973-1978.

The report noted the historic fluctuation in local and state economic conditions which make Alaskan projections for vocational education probably more difficult to predict than any other state. As a result, useful methods for gathering data and analysis applicable to situations where parameters are fluid and uncertain need to be developed. Spaziani utilized the Beta Distribution model as a means of determining

future needs. He later encouraged that such a study to be undertaken not less than once every two years.

By means of data inputs from principals of secondary schools or those who had two major responsibility for planning the vocational education program at the local level, he was able to project an expected staff increase of 147 percent over the current years. This included a total anticipated need for 740 vocational teacher positions of which 440 would be newly required beyond present conditions. Particular cluster areas projected for growth included Trade and Industrial Education (25.9%), Home Economics Education (16.7%), Office Occupations (13.4%), and Agriculture Education (12.0%). Accounting for the least number of new positions were the Service Occupations with 1.8%.

In 1974 Spaziani wrote a report based upon the above studies indicating a need for a staff development plan in vocational education which included: (1) a performance based curricula, (2) consortium of partnership arrangements with other institutions for the preparation of educational personnel, (3) a more interdisciplinary approach to all subject matter, (4) selection criteria for specific occupational programs, and (5) the recognition that personnel preparation is continuous, and perhaps the recognition that pre-service and in-service should be recognized as a continuum rather than two separate and unrelated functions.

Geigle (1977)

A study undertaken by Geigle (1977) sought to develop and pilot test a procedure for assessing the pedagogical needs of post-secondary in-service vocational and technical teachers in Minnesota. The primary

objectives, as outlined in a paper prepared for a symposium on research at the American Vocational Association Annual Meeting, included:

1. Determine the reliability of the pedagogical needs assessment instruments.
2. Determine the validity of the pedagogical needs assessment instruments.
3. Determine the utility of the teacher pedagogical needs assessment procedure.

While the focus was on post secondary teachers, it is important to report for its study on the reliability, validity and utility of the assessment instrument itself which is similar to competencies utilized by Spaziani and Courtney and first developed at The Ohio State University, The National Center for Research in Vocational Education.

The pedagogical needs assessment system consisted of three instruments. Each teacher did a self-assessment and was also assessed by his/her immediate supervisor and one class of students. The computerized feedback provided each teacher with information on each of the 100 items and the 10 scales of the instrument. Supervisors and school administrations received the pedagogical need to improve ratings in aggregate form only. Over 200 teachers, their corresponding supervisors, and school administrators from four Minnesota area vocational-technical institutes received computerized feedback. The more than 3,000 students who rated their teachers did not receive individual feedback but could examine the aggregate teacher ratings as received by school administrators. Complete confidentiality was maintained throughout the assessment and feedback effort.

Evidence for content validity was based upon (1) the plan and

cedures used to develop the instruments, (2) the perception of teachers, supervisors, and students regarding the relevance of individual items in the instruments, and (3) whether or not teachers and supervisors believed that the ratings on the instruments represented an accurate assessment of teachers' pedagogical strengths and concerns. As the results indicated, the instruments had content validity. For example, students rated 96 per cent of the items as relevant using a 50 per cent relevancy endorsement level. All of the items were considered relevant by 46 per cent or more of the 2,952 students. Both teachers and supervisors also responded affirmatively with 66 per cent of teachers and 64 per cent of supervisors indicating that the instrument as a whole represented an accurate pedagogical assessment.

Thus, it can be stated that sufficient evidence was displayed to indicate instrument content validity (Geigle, 1977, p. 121). The answer to the first main validity question "Is the content of the instruments valid for the professional domain of teaching?" was positive based upon the interpretation of the evidence.

With regard to reliablility, the internal consistency estimates of the teacher, supervisory, and student instruments using Cronbach's alpha indicated very low intra-instrument error or high internal consistency reliability. Each of the 10 scales of the teacher and supervisor instruments had lower reliability indices than the total instruments, but they were still considered high. The research also uncovered a usefulness of the assessment system for planning teacher professional development.

Among other tentative findings of the research worth reviewing are the following (Geigle, 1977, p. 130):

1. The age of teachers was not statistically related to differences in mean scores of pedagogical needs as rated by teachers, supervisors, and students. The mean scores were based on total instrument scores and were not broken down by scale scores. Teachers 51 years of age and over were rated by both the supervisors and students as having the highest pedagogical need to improve but it was not significant for either group (see Table #1).

2. Years of teaching experience was not statistically related to differences in mean scores of pedagogical need to improve. Although teachers themselves, supervisors and students rated teachers with less than one year of teaching experience as having the greatest pedagogical needs, it was not statistically significant (see Table #2).

3. The level of education of teachers was related to differences in mean pedagogical need scores as rated by students, but was not related as rated by teachers and supervisors.

4. The number of professional teacher education credits was not related to differences in mean teacher pedagogical need scores as rated by teachers, supervisors and students.

5. Whether or not teachers are pursuing a degree was related to differences in mean pedagogical need scores as rated by supervisors and students. The study noted that teachers who are not pursuing a degree have a higher need to improve their pedagogical competence than those teachers who are not pursuing a degree. The construct implied that teachers, by pursuing a degree, have convertly declared a pedagogical need and, consequently, are overtly seeking to alleviate that need.

The study also indicated a high degree of support among teachers and administrators with regard to the use of the instruments in planning professional development (see Tables 3 and 4). The study also concluded that some of the 100 items should be considered for elimination or be combined with others. It also suggested that future studies may want to include items representing the areas of (a) human relations, (b) philosophy of vocational education, (c) individualized instruction and (d) chemical dependency.

Table 1 Geigle Research*

Vocational Education Teacher Competencies

Differences in Mean Scores as Related to Age of Teachers

	Teachers Rated By		
Age Groups	Teachers Mean	Supervisors Mean	Students Mean
30 and under	262.1	233.6	56.0
31 - 35	248.0	206.6	59.6
36 - 40	237.9	210.0	56.0
41 - 45	254.1	222.7	61.8
46 - 50	255.3	221.2	59.2
51 and over	232.0	234.9	63.3
F-Ratio	.725	.644	1.24
Probablility	.605	.667	.290

Table 2 Geigle Research

Vocational Education Teacher Competencies

Differences in Mean Scores as Related to Years of Teaching Experience of Teachers

	Teachers Rated By		
Years of Teaching Experience	Teachers Mean	Supervisors Mean	Students Mean
Less than 1	275.4	245.0	62.2
1 - 2	249.3	193.3	57.9
2 - 3	232.8	200.3	58.8
3 - 4	255.0	234.3	58.5
4 - 6	262.3	223.4	58.5
6 - 8	222.3	223.6	60.1
8 - 10	238.1	206.8	56.5
More than 10	241.3	224.6	60.4
F-Ratio	1.40	1.04	.325
Probablility	.206	.409	.942

*Source: Geigle (1977) pp. 131-132. Published as Tables 9 and 10 of doctorial study.

Table 3 Geigle Research*

Vocational Education Teacher Competencies

Usefulness of the Pedagogical Needs Information for Planning Teacher Professional Development as Perceived by Teachers

	Teacher Perception of Usefulness (N=196)	
Information	Yes	No
	%	%
Teacher Self-Assessment	72	28
Supervisor Assessment of Teacher	77	23
Student Assessment of Teacher	87	13

Table 4 Geigle Research*

Vocational Education Teacher Competencies

Usefulness of the Pedagogical Needs Information for Planning Teacher Professional Development as Perceived by Supervisors

	Supervisor Perception of Usefulness (N=158)	
Information	Yes	No
	%	%
Teacher Self-Assessment	76	24
Supervisor Assessment	86	14
Student Assessment	87	13

*Source: Geigle (1977) pp. 141-142. Published as Tables 14 and 15 of doctorial study.

Allan (1978)

A related study was undertaken by Allan (1978) at the Minnesota Research and Development Center for Vocational Education with respect to the design of a teacher evaluation system which could be utilized as a means to staff development. The major objectives of the study outlined in a paper prepared for the American Vocational Association Annual Meeting in 1977 (Allen, 1977) were to:

1. Construct a set of instruments to evaluate the teaching performance of post secondary vocational teachers for the purpose of (a) improving instruction and (b) teacher self-development.
2. Determine if the set of instruments is sufficiently reliable for the intended purposes.
3. Determine if the set of instruments is sufficiently valid for the intended purposes.

Although the focus was again for post secondary institutions, the basic principles and research findings may also be related to the secondary level as well. The first objective dealt with the construction of the instruments while the second and third focused upon the evaluation of the technical qualities of the instruments.

The assumption underlying the study was that if it were possible to indeed identify teacher competencies, then it should also be possible to measure the degree to which those competencies were being carried out through an evaluation system and thus lead to a plan for personal staff development based upon the results. A set of instruments for improving instruction and teacher self-development included (a) student evaluation instruments, (b) teacher evaluation instruments, and (c) supervisor evaluation instruments. Among the procedures undertaken

in the construction of these instruments included: a review of literature, establishment of guidelines for instrument construction, identification of an item pool, selection of items from the pool, review of items by various educators and students, and both a pre-pilot and pilot test.

With respect to the content validity the following questions were addressed:

1. Was the instrument construction process based on a logical plan?
2. Do students perceive the items to be important for effective teaching?
3. Do teachers perceive the items to be important for effective teaching?
4. Do supervisors perceive the items to be important for effective training?
5. Do students understand the items?

The population consisted of 213 teachers, 26 supervisors who rated 174 teachers, and 3,147 students from four post secondary Area Vocational Technical Institutes in Minnesota. Each teacher completed a self-evaluation. Each teacher was also rated by his/her supervisor and one class of students. To provide reliability (stability) data, a sample of teachers, students, and supervisors were retested approximately two weeks after the first administration.

The focus of the evaluation was classroom, shop or laboratory teaching performance measured in terms of (1) input-teacher behaviors and (2) output-student indications of how much they had learned.

Reliability was investigated in terms of both internal consistency

and stability. Internal consistency was estimated using Cronbach's coefficient alpha which is based on the average correlation among items within a test. The Pearson product-moment correlation was used to estimate stability. Both content and criterion related validity were investigated.

Each teacher received a computer printout containing his/her self-rating and the class mean rating for each of the specific items. In addition to this individual feedback information, the teacher's feedback printout contained norm data on the average student, teacher, and supervisor ratings on each item for all schools and their individual school. It should be pointed out that no one except the teacher received the teacher's self and class ratings. Supervisors and administrators received feedback ratings in aggregate form only (see Appendices A-8 for more details).

There appears to be sufficient evidence within the study to support indications of reliability and validity. There was also high agreement on the usefulness of the evaluation information as indicated later in this report. As seen from the staff development context, this may mean that future teacher evaluations in vocational education based upon teacher competencies may provide information that will help in the design of a personal plan for self-improvement. The usefulness of these specific instruments for secondary teacher evaluations in vocational education can now be further tested and modified. Such further testing is indeed now underway in Kentucky, Virginia and Wisconsin.

Other Studies

Research conducted by The National Center for Research in Vocational Education at The Ohio State University has also uncovered an initial list of competencies for the local administrator of vocational educational programs. Among the highest ranked administrative tasks are the following:

1. Involve community representatives in program planning and development.
2. Evaluate the effectiveness of the instructional program.
3. Recruit and review potential staff.
4. Observe and evaluate staff performance.
5. Maintain ethical standards expected of a professional educator.
6. Develop and maintain professional relationships with other administrators.

As future research is done in this area, the relationship between teachers and administrative competencies should become better identified.

Research presently underway by The Northern Institute with respect to the in-service needs of Alaskan secondary vocational education teachers will help clarify distinctions between pre-service and in-service areas of focus for staff development and training.

ALASKA VOCATIONAL EDUCATION PRE-SERVICE COMPETENCIES:

THE FINDINGS

Listed below are the major findings of this study. Implications from these findings are listed in the recommendations section.

1. There is widespread overall support for the assessment instrument as it related to preservice needs of Alaska's vocational educational secondary teachers. Panel reactors on the whole indicated a positive response to the competencies selected for the instrument. Utilizing the results of previous research on vocational education teacher competencies served as an excellent base for the identification of preservice needs.
2. There is a high degree of agreement with respect to the individual competencies rated by panel members. A significant percentage (94%) were rated 3.0 or above on a Likert type scale (5 - critical; 1 - not needed). These findings are consistent with those found in an earlier study by Spaziani and Courtney (1973) utilizing a similar scale and competencies. Their study was directed toward the teacher and based upon a return of 177 responses. The means for the fifty competencies (clusters) ranged from a high of 4.158 to a low of 3.079. However, the study was not directed toward pre-service needs in specific but the common professional competencies needed by Alaska's secondary school teachers.

3. Several specific competencies were rated low for beginning teachers. These centered around those competencies required to carry out vocational surveys and supervise student teachers. Specific items rated consistently low by panel reactors included the following:

Survey
- #1 Plan a community survey
- #2 Collect and analyze community survey data
- #3 Report the findings of a community survey

Student Teaching
- #88 Plan and provide laboratory experiences for prospective teachers
- #89 Plan student teaching experiences
- #90 Supervise student teachers

Future assessment instruments should perhaps eliminate these competencies for <u>beginning</u> teachers. Several reactors indicated the importance of surveys but felt beginning teachers simply could not devote sufficient time and energy in this area. With respect to student teaching it seems only appropriate that first year need not direct attention to this focus area.

4. All of remaining competencies should be retained on future assessment instruments. The addition of selected competencies dealing with sex-role stereotyping, chemical dependency, etc. proved correct from the panel reactors' perspective. Evidence in other studies throughout the country support this position.

5. Alaskan vocational education secondary teachers competencies are similar to other states in generic content. No significant differences were uncovered or suggested by panel reactor

responses.

6. Panel reactors rated an overall high need with respect to individual occupational services areas within vocational education for the next five years. Only health occupations and home economics were cited somewhat less than the other cluster areas. Overall, there appears to be a continuing strong need for training at the secondary level in all occupational clusters (see Table 5).
7. Highest general cluster categories rated by panel members included instructional planning, evaluation, management and implementation (see Table 6). Competencies associated with coordination and professional role development were rated lowest on an overall comparison of mean scores for the competencies. These ratings are consistent with others done previously which tend to give overall highest preference to the instructional aspects of teaching and less emphasis to guidance, school community relations, coordination and related categories.
8. Specific competencies rated highest were also centered around classroom instruction. These included (a) directing students in applying problem-solving techniques, (b) planning units of instruction, (c) determining student interests and needs, (d) providing for accident prevention, and (e) assisting students in developing self-discipline (see Table 7).
9. Most panel reactors indicated a desireable preference for

ALASKA VOCATIONAL EDUCATION PRE-SERVICE COMPETENCIES

RANK ORDER BY SERVICE AREAS

Table 5

Rank	Service Area	Mean Score
1	Distributive Education	4.200
2	Vocational Guidance	4.143
3	Office Occupations	4.133
4	Industrial Education	4.125
	Agricultural and Natural Resources	4.125
6	Health Occupation	3.733
7	Home Economics	3.600

ALASKA VOCATIONAL EDUCATION PRE-SERVICE COMPETENCIES

Rank Order By Categories

Table 6

Rank	Category	Mean Score
1	Instructional Planning	4.281
2	Instructional Evaluation	4.174
3	Instructional Management	4.054
4	Instructional Implementation	4.025
5	Student Vocational Organization	3.753
6	Guidance	3.725
7	School-Family Relations	3.713
8	Program Planning, Development and Evaluation	3.584
9	Professional Role and Development	3.428
10	Coordination	3.266

ALASKA VOCATIONAL EDUCATION PRE-SERVICE COMPETENCIES

RANK ORDER BY SPECIFIC COMPETENCIES

Table 7

Rank	Competence	Mean Score
1	Direct students in applying problem-solving techniques	4.706
2	Plan units of instruction	4.647
3	Determine needs and interests of students	4.529
	Provide accident prevention and training for vocational students	4.529
5	Assist students in developing self-discipline	4.500
6	Evaluate instructional effectiveness	4.471
7	Demonstrate manipulative skills	4.438
	Keep up-to-date in your profession and in your occupational specialty	4.438
9	Manage student behaviors appropriately	4.418
10	Establish student performance criteria	4.412

training to meet the identified competencies in locations that were partly in Alaska and partly Outside.

10. Panel reactors were divided with respect to their likelihood preference as to where that training might actually take place. Members generally felt such training will likely be provided entirely in Alaska or split between Alaska and locations outside the State.
11. Individual panel members contributed a variety of ideas on improving the assessment instrument, the individual wording of competencies and follow-up procedures (see Appendices A-3).
12. Most panel reactors (over 70%) indicated a willingness to serve on a consortium of vocational educators to further address issues and concerns raised in this study. The remaining members were undecided but no member chose to respond negatively.

PRESENT RECOMMENDATIONS

Listed below are a variety of recommendations directed toward local education agencies and institutions of higher education related to vocational education.

To Local Education Agencies

LEA-1 An assessment system should be established for identifying specific competencies required by instructional and administrative personnel that are unique to a geographic area or community. This is particularly true in rural and bush areas which may place additional demands upon the newly hired teacher due to lack of other support personnel. Identification of such additional competencies could be utilized to assist in the selection of appropriate teaching personnel. The competencies listed in this report are only meant to serve as a base line of generic competencies.

LEA-2 Use of the competency assessment instrument for both pre-service and in-service planning warrants further study. As research indicated earlier, teacher needs related to these competencies are not dependent upon degree level acquired or numbers of years of teaching experience. A revised instrument could thus be field tested for use in planning local training programs for both pre-service and in-service opportunities.

LEA-3 The importance of positive local leadership within the administration with regard to staff development should not be overlooked. If assessments are to be utilized and staff development programs implemented then positive support must be a hallmark of local operational procedures.

LEA-4 Research by Allen (1978) suggests that a restructuring and/or redefinition of the supervisory framework is warranted with respect to competency-based efforts to (a) ensure that the supervisor has an adequate knowledge of the teaching performance of these teachers under his/her supervision and (b) ensure that teachers will receive assistance in planning a program of personal self-development based, in part, on the results of their competency based performance evaluation. This means that supervisors at the local level must become knowledgeable with respect to the competencies as well as refocus their own evaluation standards to include competency-based teacher evaluation procedures.

LEA-5 Some of the presently identified teacher competencies may need to be adjusted in relationship to the availability of competencies by vocational education administrators. For example, many of the present competencies listed under the coordinating category may indeed be the responsibility of an administrator. This is dependent in large part to the size of the vocational education budget and number of assigned personnel. In instances where support staff are available role clarification between teacher, administrator and other personnel should be undertaken. This will not only lessen the likelihood of duplication but also encourage a supportive team approach.

To Institutions of Higher Education

IHE-1 The use of a revised pre-service assessment instrument for

counseling with students in teacher preparation programs warrants further study. If the competencies, as validated by the reaction panel, are truly needed by Alaskan teachers entering the occupational field, then a measurement of attainment should be undertaken before the prospective teacher leaves the preparation program. The list could also be utilized as a guide during counseling sessions among students and professors in arriving at a plan of study and course selection.

IHE-2 An assessment should be undertaken by institutions of higher education to determine the degree to which existing course curricula do indeed attempt to address the specific competencies listed in the assessment instrument. Revisions and refinements may be necessary depending upon the present state of affairs with respect to the curriculum program. The teacher performance competencies can thus serve as a framework or foundation upon which such curricula programs are developed and modified.

IHE-3 The delivery of field based instructional systems for meeting many of these identified competencies while on-the-job should be explored. As indicated elsewhere, these competencies are not limited to pre-service needs but likewise appear to be linked to in-service needs. As Spaziani (1973) has suggested earlier, the development of mini-courses around specific cluster areas with an outreach approach to the delivery of instruction services merits further investigation. These mini-courses should use the resultant competency clusters as a base for writing performance objectives, and

subsequently, the utilizing of individualized learning packages to implement the instruction associated with the objectives. For example, each major cluster category (i.e. instructional planning, instructional implementation, guidance, coordination) could serve as a focus for a mini-course.

IHE-4 Many of the competencies in this assessment are generic and represent not only the needs of vocational education teachers but other teachers as well. As Spaziani and Courtney (1973, p. 40) have suggested:

> "It is conceivable that many of the pedagogical competencies ordinarily included in special methods courses during the teacher preparation phase can be offered in settings which assemble teacher trainees representing several discipline areas. By combining various types of vocational teacher trainees into common pedagogical classes, a much less costly and more efficient teacher preparation operation could be developed."

IHE-5 This assessment instrument makes no attempt to assess the specific technical skills associated within each occupational cluster. A variation in the competency desired must be associated with the specific vocational mission of the teacher. As Spaziani (1974, p. 15) noted:

> "The mix of the instructor's occupational area and its depth and breadth is dependent upon the instructional responsibilities, whether there is a need for developing specialized occupational skills (community college levels), providing occupational orientation (secondary schools), or facilitating the learning of other subject matter (related) areas. The greater the skill depth of specialization to be developed by the student, the greater the teacher's depth of skill must be. Some programs have a need for teachers with a high degree of specialized up-to-date occupational competence. Other programs also need "interpreters" who can speak the language, command the respect and sustain the involvement of specialized groups of students."

Other studies point out that trades people, tradesmen-turned-teachers,

end to retain their work-oriented personal and interpersonal values rather than to accept those possessed by many teachers. They expect students to be carefully selected to fit the demands of a rigid curriculum pattern in order that their own perception of industrial requirements and standards can be met as efficiently as possible. Teachers with this work-orientation are finding it increasingly difficult to cope with a student-oriented approach to vocational education, and to adapt to the need for providing all kinds of students with occupational skills.

IHE-6 Other recommendations noted by Spaziani earlier (1974) but worth re-emphasizing are the following:

- provide greater flexibility in student program planning and facility utilization.
- identify and implement courses common to all occupational areas taught.
- design a more comprehensive offering of off-campus classes.
- provide a desirable balance of general, technical, and professional education.
- provide flexibility to meet the individual needs of students.
- provide curriculum which is of the greatest value to students.
- provide competencies in the areas of greatest need in the field.
- provide a balance between theory and practice.

IHE-7 Investigation by Alaskan institutions of higher education should be explored with respect to forming a consortium with outside institutions of higher education in providing for a quality program of teacher education in vocational education in all occupational areas. The high costs of manpower and the need for technical skills associated with each occupational service area simply necessitate such an approach. Half of the panel reactors favor such a joint cooperative arrangement as desireable in the next five years.

FUTURE RECOMMENDATIONS

Listed below are a variety of recommendations directed toward the Alaska State Department of Education with respect to future uses and plans associated with vocational education pre-service teacher competencies.

SEA-1 Specific modifications should be made in the assessment instrument as indicated in the findings. This means deleting some items, revising some items and changing the format somewhat.

SEA-2 Closer investigation with respect to any differences in rural and urban competencies need to be explored. Conflicting reports among panel reactors and research findings exist.

SEA-3 Selected gatherings of vocational educators (conferences, in-services and workshops) should be utilized in the future to gain feedback on the present list of competencies as well as add new ones on a continual basis. Special sessions on vocational teacher competencies may be warranted at statewide events.

SEA-4 A consortium of vocational educators and selected others should be formed to continue the work undertaken by the reactor panel. Many of the present members of that panel indicated a willingness to serve in such a capacity. The consortium should address such issues and topics as (1) devising a means to assess all beginning vocational teachers with respect to pre-service needs; (2) investigating various staff development models for use of the information once it becomes available, (3) determining the practical short and long range implications of this study for institu-

tions of higher education and teacher education and (4) relating this and other information to teacher certification plans for vocational educators. The consortium should have a budget that will allow for travel, consultants, administrative services and other support personnel. The consortium should further develop a good working relationship with a variety of committees and organizations already involved in vocational education within the state. Input from not only teachers but students, administrators and the broader community should be actively sought by the consortium. This comsortium will serve as a special interest group to insure that the pre-service needs of vocational education of the secondary level continue to be addressed and refined.

SEA-5 An RFP or other contract should be issued to an appropriate agency to identify the related set of vocational education administrative competencies within Alaska which can serve in a supportive and complimentary capacity to teacher competencies. Research by The Ohio State University has already been initially undertaken in this area and would provide a basic framework for development and testing (see Appendices A-6).

SEA-6 An RFP or other contract should also be issued to an appropriate agency to identify a staff development plan which could be utilized to implement the results of the competency-based vocational education teacher performance assessment. Work presently underway by the Minnesota Research and Development Center for Vocational Education could provide a basic framework for development and

testing. This staff development model was piloted and tested in Minnesota and now has expanded to include other schools in Kentucky, Virginia and Wisconsin. The process includes (1) professional needs assessment instruments, (2) evaluation of instruction instruments, (3) computer programs that generate four types of feedback reports and (4) four planning resource guides designed to assist teachers, supervisors, administrators and other local and state personnel in (a) interpreting their computerized feedback and (b) developing a personal plan for professional development (see Appendices A-8).

SEA-7 An inventory of all institutions of higher education within Alaska should be undertaken with respect to various curricular programs designed for vocational education teachers. This inventory should address the degree to which the specific pre-service competencies outlined in this report are being met as well as the specific technical skills associated with the service occupational areas.

SEA-8 The Department of Education in cooperation with Alaskan institutions of higher education should explore the feasibility of a consortium relationship with institutions of higher education outside of Alaska to meet the immediate needs associated with vocational education teacher training. Cooperative agreements should be pursued and sought where present vocational education teacher training programs in Alaska are found to need assistance and support.

SEA-9 Additional research should be undertaken with respect to the Beta

Distribution model and other techniques for estimating future manpower needs related to vocational education. Spaziani's (1973) recommendation that such an estimate be done every two years warrants further investigation.

SEA-10 Other specific recommendations by panel reactor members should be reviewed for possible action (see Appendices A-3).

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APPENDICES

A-1 Alaska Vocational Education Pre-service Teacher Competencies Assessment Instrument.

A-2 Results of Alaska Vocational Education Pre-service Teacher Competencies.

A-3 Panel Reactors' Written Responses and Suggested Revisions.

A-4 Vocational Teachers' Job Description.

A-5 Vocational Education Administrative Job Description.

A-6 Competencies Important to Secondary and Post-Secondary Local Administration of Vocational Education.

A-7 Vocational Teacher Professional Competencies Essential to Installing and Conducting Competency-based Instruction.

A-8 Review of Staff Development Research '75-'78 Conducted by Minnesota Research and Development Center for Vocational Education.

A-9 Number of Teachers by Vocational Assignment.

A-10 Projection of the State's Enrollment in Vocational Programs (FY '78-'82).

A-11 Average Annual Employment by Occupation -- Alaska.

A-1

ALASKAN VOCATIONAL EDUCATION PRE-SERVICE TEACHER COMPETENCIES

Introduction:

The Alaska Department of Education has contracted with The Northern Institute to identify the pre-service competencies of all prospective vocational education teachers. The purpose is to give future direction for the preparation of vocational education secondary teachers in Alaska. You have been identified as a knowledgeable professional in the field of vocational education and/or teacher education. We, therefore, ask your assistance in responding to this preliminary assessment form to facilitate the identification of these competencies.

Please rate the specific competencies listed as follows with regard to their degree of importance for beginning secondary level vocational teachers in Alaska by circling the appropriate response. Also complete the additional set of questions at the end of the competencies list. Return your responses in the enclosed self-addressed envelope by no later than December 12, 1978. Please sign your name and phone number so we might further contact you, if the need arises.

Thanks for your help! We will share the results with you!

_____

NAME

_____

PHONE NUMBER

PART I THE COMPETENCIES NEEDED BY BEGINNING SECONDARY TEACHERS OF VOCATIONAL EDUCATION IN ALASKA

The degree the competency is needed by a beginning teacher. (Please circle one number, indicating degree needed, for each numbered item.)

General categories and specific competencies in:	Critical	High	Medium	Low	Not Needed
A. Program Planning, Development and Evaluation					
1. Plan a community survey	5	4	3	2	1
2. Collect and analyze community survey data	5	4	3	2	1
3. Report the findings of a community survey	5	4	3	2	1
4. Organize an occupational advisory committee	5	4	3	2	1
5. Maintain an occupational advisory committee	5	4	3	2	1
6. Develop vocational education program goals and objectives	5	4	3	2	1
7. Conduct an occupational analysis	5	4	3	2	1
8. Develop a course of study	5	4	3	2	1
9. Provide for students with cultural and ethnic differences	5	4	3	2	1
10. Avoid sex-role stereotyping	5	4	3	2	1
11. Develop long-range program plans	5	4	3	2	1
12. Conduct a student follow-up study	5	4	3	2	1
13. Evaluate the vocational program	5	4	3	2	1
B. Instructional Planning					
14. Determine needs and interests of students	5	4	3	2	1
15. Develop student performance objectives	5	4	3	2	1
16. Plan units of instruction	5	4	3	2	1
17. Write lesson plans	5	4	3	2	1
18. Prepare adapted instruction for students with physical and mental handicaps	5	4	3	2	1
19. Select student instructional materials	5	4	3	2	1
20. Evaluate and revise student instructional materials	5	4	3	2	1
21. Prepare teacher-made instructional materials	5	4	3	2	1
C. Instructional Implementation					
22. Direct field trips	5	4	3	2	1
23. Conduct group discussions, panel discussions, and symposiums	5	4	3	2	1
24. Stimulate learning through brainstorming, buzz group, and question box techniques	5	4	3	2	1
25. Direct students in instructing other students	5	4	3	2	1
26. Employ stimulation techniques	5	4	3	2	1
27. Guide student study	5	4	3	2	1
28. Direct student laboratory experience	5	4	3	2	1
29. Direct students in applying problem-solving techniques	5	4	3	2	1
30. Conduct instruction through the "project" method	5	4	3	2	1
31. Introduce the lessons	5	4	3	2	1
32. Summarize the lessons	5	4	3	2	1
33. Employ oral questioning techniques	5	4	3	2	1
34. Employ reinforcement techniques	5	4	3	2	1
35. Provide individual instruction for students with special needs	5	4	3	2	1
36. Present information through illustrated talks	5	4	3	2	1
37. Demonstrate manipulative skills	5	4	3	2	1
38. Demonstrate concepts or principles	5	4	3	2	1

		Critical	High	Medium	Low	Not Needed
39.	Direct individualized instruction	5	4	3	2	1
40.	Conduct team teaching	5	4	3	2	1
41.	Present information using a subject matter expert	5	4	3	2	1
42.	Present information by using various audio-visual aids	5	4	3	2	1
43.	Employ programmed instruction	5	4	3	2	1
D.	Instructional Evaluation					
44.	Establish student performance criteria	5	4	3	2	1
45.	Construct appropriate tests of student performance	5	4	3	2	1
46.	Assess student cognitive performance	5	4	3	2	1
47.	Assess student affective performance	5	4	3	2	1
48.	Assess student psychomotor performance	5	4	3	2	1
49.	Determine student grades	5	4	3	2	1
50.	Evaluate instructional effectiveness	5	4	3	2	1
E.	Instructional Management					
51.	Project instructional resource needs	5	4	3	2	1
52.	Prepare vocational budgets and reports	5	4	3	2	1
53.	Arrange for expanding facilities and/or for purchasing supplies for the vocational program	5	4	3	2	1
54.	Maintain a filing system	5	4	3	2	1
55.	Provide safety prevention and training for vocational students	5	4	3	2	1
56.	Provide for the first aid needs of vocational students	5	4	3	2	1
57.	Assist students in developing self-discipline	5	4	3	2	1
58.	Organize the vocational laboratory	5	4	3	2	1
59.	Manage and maintain the vocational laboratory	5	4	3	2	1
60.	Manage student behaviors appropriately	5	4	3	2	1
F.	Guidance					
61.	Select and use appropriate student data collection sources and techniques	5	4	3	2	1
62.	Gather student data through personal contacts	5	4	3	2	1
63.	Use conferences to help meet student needs	5	4	3	2	1
64.	Provide information on educational and career opportunities	5	4	3	2	1
65.	Assist students in applying for employment or further education	5	4	3	2	1
66.	Assist students in value clarification	5	4	3	2	1
67.	Recognize and assist students with chemical dependency and/or drug problems	5	4	3	2	1
G.	School-Community Relations					
68.	Develop a plan for school-community relations	5	4	3	2	1
69.	Give presentations to school and community groups to promote vocational education programs	5	4	3	2	1
70.	Inform the school and community about the vocational education program by using a variety of informational techniques	5	4	3	2	1
71.	Conduct an open house	5	4	3	2	1
72.	Provide service to and maintain liaison with members of the community	5	4	3	2	1
73.	Work with state and local educators	5	4	3	2	1
74.	Obtain feedback from the school and community concerning the vocational education program	5	4	3	2	1
75.	Conduct parent-teacher conferences	5	4	3	2	1

		Critical	High	Medium	Low	Not Needed
H.	**Student Vocational Organization**					
76.	Develop a personal philosophy toward student vocational organizations	5	4	3	2	1
77.	Establish student vocational organizations	5	4	3	2	1
78.	Prepare students for leadership roles in student vocational organizations	5	4	3	2	1
79.	Assist students in developing and financing a yearly program of activities	5	4	3	2	1
80.	Supervise activities of student vocational organizations	5	4	3	2	1
81.	Provide learning experiences for vocational students through contests, travel, and other means	5	4	3	2	1
I.	**Professional Role and Development**					
82.	Keep up-to-date in your profession and in your occupational specialty	5	4	3	2	1
83.	Participate in professional teacher activities	5	4	3	2	1
84.	Develop an active personal philosophy of education	5	4	3	2	1
85.	Participate in school and community affairs	5	4	3	2	1
86.	Assess one's self in terms of attitude toward personal and interpersonal relationships	5	4	3	2	1
87.	Select, obtain and maintain a teaching position in keeping with your professional qualifications	5	4	3	2	1
88.	Plan and provide laboratory experiences for prospective teachers	5	4	3	2	1
89.	Plan student teaching experiences	5	4	3	2	1
90.	Supervise student teachers	5	4	3	2	1
J.	**Coordination**					
91.	Establish criteria and guidelines for operating cooperative vocational education programs	5	4	3	2	1
92.	Establish and apply policies for managing student attendance, transfers, and terminations	5	4	3	2	1
93.	Identify and enroll prospective students	5	4	3	2	1
94.	Identify and secure prospective training stations	5	4	3	2	1
95.	Place students on the job	5	4	3	2	1
96.	Develop the training ability of on-the-job instructors	5	4	3	2	1
97.	Coordinate and supervise on-the-job instruction	5	4	3	2	1
98.	Evaluate students on-the-job performance	5	4	3	2	1
99.	Plan and conduct related instruction	5	4	3	2	1
100.	Supervise employer-employee appreciation events	5	4	3	2	1
101.	Establish and apply procedures to comply with federal and state regulations for education of handicapped and gifted students	5	4	3	2	1
102.	Other competencies (please specify)	5	4	3	2	1
	_____	5	4	3	2	1
	_____	5	4	3	2	1
	_____	5	4	3	2	1
	_____	5	4	3	2	1

(use other side of page, if necessary)

PART II - RELATED INFORMATION

What is the need for new secondary teachers to be prepared to teach in each of the following service areas, as you project the future five year need in Alaska?

(circle one number for each service area)

	Service Areas	Rating: High need				Low need
103.	Agriculture and natural resources	5	4	3	2	1
104.	Distributive education	5	4	3	2	1
105.	Health occupations	5	4	3	2	1
106.	Home economics	5	4	3	2	1
107.	Industrial education	5	4	3	2	1
108.	Office occupations	5	4	3	2	1
109.	Vocational guidance	5	4	3	2	1

If a pre-service program were established to provide the competencies for future Alaska vocational teachers which you have identified in this survey, please state your preference as to the desirability and likelihood of its location.

110. Desirability (check one)

____a. Entirely in Alaska
____b. Partly in Alaska and part outside
____c. Entirely outside, with program independent of Alaska influence
____d. Entirely outside, with Alaska requirements agreed upon

111. Likelihood (check one)

____a. Entirely in Alaska
____b. Partly in Alaska and part outside
____c. Entirely outside, with program independent of Alaska influence
____d. Entirely outside, with Alaska requirements agreed upon

REVISIONS QUESTIONNAIRE

1. Are there any specific competencies which should be restated or changed in wording?

   _____No _____Yes (If yes, specify number of competency and changes recommended)

2. Are there any other suggestions you would make with regard to modifying the overall assessment instrument?

3. Do you have any suggestions with regard to a procedure for yearly update of the competencies?

4. Other comments or suggestions you would like to make:

5. Would you have the time and interest to serve on a consortium of people to address these issues further during the coming year? (1979-1980)

   _____Yes _____Undecided _____No

_____
NAME

A-2

Results Of
ALASKAN VOCATIONAL EDUCATION PRE-SERVICE TEACHER COMPETENCIES

Part I: The Competencies Needed By Beginning Secondary Teachers of Vocational Education in Alaska

General categories and specific competencies in:	Mean Score
A. Program Planning, Development and Evaluation	3.584
1. Plan a community survey	3.029
2. Collect and analyze community survey data	2.971
3. Report the findings of a community survey	2.969
4. Organize an occupational advisory committee	3.735
5. Maintain an occupational advisory committee	3.889
6. Develop vocational education program goals and objectives	3.941
7. Conduct an occupational analysis	3.589
8. Develop a course of study	4.235
9. Provide for students with cultural and ethnic differences	3.875
10. Avoid sex-role stereotyping	3.563
11. Develop long-range program plans	3.765
12. Conduct a student follow-up study	3.412
13. Evaluate the vocational program	3.589
B. Instructional Planning	4.281
14. Determine needs and interests of students	4.529
15. Develop student performance objectives	4.294
16. Plan units of instruction	4.647
17. Write lesson plans	4.176
18. Prepare adapted instruction for students with physical and mental handicaps	3.941
19. Select student instructional materials	4.000
20. Evaluate and revise student instructional materials	4.147
21. Prepare teacher-made instructional materials	4.281
C. Instructional Implementation	4.025
22. Direct field trips	3.688
23. Conduct group discussions, panel discussions, and symposiums	3.412
24. Stimulate learning through brainstorming, buzz group, and question box techniques	3.688
25. Direct students in instructing other students	3.618
26. Employ stimulation techniques	3.765
27. Guide student study	4.176
28. Direct student laboratory experience	4.353
29. Direct students in applying problem-solving techniques	4.706
30. Conduct instruction through the "project" method	4.088
31. Introduce the lessons	4.235

		Mean Score
32.	Summarize the lessons	4.235
33.	Employ oral questioning techniques	4.176
34.	Employ reinforcement techniques	4.250
35.	Provide individual instruction for students with special needs	4.353
36.	Present information through illustrated talks	4.176
37.	Demonstrate manipulative skills	4.438
38.	Demonstrate concepts or principles	4.250
39.	Direct individualized instruction	4.353
40.	Conduct team teaching	3.375
41.	Present information using a subject matter expert	3.656
42.	Present information by using various audio-visual aids	4.000
43.	Employ programmed instruction	3.265
D.	Instructional Evaluation	4.174
44.	Establish student performance criteria	4.412
45.	Construct appropriate tests of student performance	4.118
46.	Assess student cognitive performance	4.000
47.	Assess student affective performance	3.938
48.	Assess student psychomotor performance	4.063
49.	Determine student grades	4.188
50.	Evaluate instructional effectiveness	4.471
E.	Instructional Management	4.054
51.	Project instructional resource needs	3.941
52.	Prepare vocational budgets and reports	3.647
53.	Arrange for expanding facilities and/or for purchasing supplies for the vocational program	3.706
54.	Maintain a filing system	3.647
55.	Provide accident prevention and training for vocational students	4.529
56.	Provide for the first aid needs of vocational students	4.186
57.	Assist students in developing self-discipline	4.500
58.	Organize the vocational laboratory	3.941
59.	Manage and maintain the vocational laboratory	4.313
60.	Manage student behaviors appropriately	4.418
F.	Guidance	3.725
61.	Select and use appropriate student data collection sources and techniques	3.719
62.	Gather student data through personal contacts	3.353
63.	Use conferences to help meet student needs	3.706
64.	Provide information on educational and career opportunities	4.294
65.	Assist students in applying for employment or further education	3.941
66.	Assist students in value clarification	3.647
67.	Recognize and assist students with chemical dependency and/or drug problems	3.412

		Mean Score
G.	School-Community Relations	3.713
68.	Develop a plan for school-community relations	3.559
69.	Give presentations to school and community groups to promote vocational education programs	3.882
70.	Inform the school and community about the vocational education program by using a variety of informational techniques	3.824
71.	Conduct an open house	3.471
72.	Provide service to and maintain liaison with members of the community	3.676
73.	Work with state and local educators	3.588
74.	Obtain feedback from the school and community concerning the vocational education program	3.765
75.	Conduct parent-teacher conferences	3.941
H.	Student Vocational Organization	3.753
76.	Develop a personal philosophy toward student vocational organizations	3.938
77.	Establish student vocational organizations	3.625
78.	Prepare students for leadership roles in student vocational organizations	3.750
79.	Assist students in developing and financing a yearly program of activities	3.688
80.	Supervise activities of student vocational organizations	3.882
81.	Provide learning experiences for vocational students through contests, travel, and other means	3.625
I.	Professional Role and Development	3.428
82.	Keep up-to-date in your profession and in your occupational specialty	4.438
83.	Participate in professional teacher activities	4.000
84.	Develop an active personal philosophy of education	4.188
85.	Participate in school and community affairs	4.000
86.	Assess onesself in terms of attitude toward personal and interpersonal relationships	3.706
87.	Select, obtain and maintain a teaching position in keeping with your professional qualifications	4.000
88.	Plan and provide laboratory experiences for prospective teachers	2.250
89.	Plan student teaching experiences	2.125
90.	Supervise student teachers	2.125
J.	Coordination	3.266
91.	Establish criteria and guidelines for operating cooperative vocational education programs	3.529
92.	Establish and apply policies for managing student attendance, transfers, and terminations	3.588
93.	Identify and enroll prospective students	3.471

		Mean Score
94.	Identify and secure prospective training stations.....	3.706
95.	Place students on the job.....	3.667
96.	Develop the training ability of on-the-job instructors..	3.412
97.	Coordinate and supervise on-the-job instruction.....	3.706
98.	Evaluate students on-the-job performance.....	3.647
99.	Plan and conduct related instruction.....	3.882
100.	Supervise employer-employee appreciation events.....	3.294
101.	Establish and apply procedures to comply with federal and state regulations for education of handicapped and gifted students.....	3.412
102.	Other competencies (please specify).....	

How to prepare questionnaires (rated of crucial importance)

How to conduct community surveys (of medium importance)

How to analyze data results (of medium importance)

How to prepare reports (of medium importance)

How to plan (rated of crucial importance)

Assist with the recruitment of students (of high importance)

Serve as a counselor to student needs (not rated)

PART II - RELATED INFORMATION

What is the need for new secondary teachers to be prepared to teach in each of the following service areas, as you project the future five year need in Alaska?

	Service Areas	Mean Score
103.	Agriculture and natural resources	4.125
104.	Distributive education	4.200
105.	Health occupations	3.733
106.	Home economics	3.600
107.	Industrial education	4.125
108.	Office occupations	4.133
109.	Vocational guidance	4.143

If a pre-service program were established to provide the competencies for future Alaska vocational teachers which you have identified in this survey, please state your preference as to the desirability and likelihood of its location.

110. Desirability (check one)

- 5 Entirely in Alaska
- 12 Partly in Alaska and part outside
- 0 Entirely outside, with program independent of Alaska influence
- 0 Entirely outside, with Alaska requirements agreed upon

111. Likelihood (check one)

- 6 Entirely in Alaska
- 9 Partly in Alaska and part outside
- 0 Entirely outside, with program independent of Alaska influence
- 1 Entirely outside, with Alaska requirements agreed upon

A-3

Panel Reactors' Written Responses and
Suggested Revisions

1. Are there any specific competencies which should be restated or changed in wording?

"More emphasis placed on skill development - perhaps separate category"

"Items 88, 89, 90 first year vocational teachers should not be placed in a situation where they supervise student teachers"

"26 stimulation or simulation? 37 physical skills, yes (4) but not interpersonal skills at manipulation"

"Single competency statements, please. For example, there is a vast difference between 'collect' and 'analyze'; Determining 'needs' and 'interests'; etc. etc. etc. Should be one or the other, not both."

"89 and 90 for DE teachers as there is no program that I know of--Anchorage."

"Some competencies are primarily administrative responsibilities, not beginning teachers."

"#57. It was the intent that this competency statement would include 'manage student behaviors' #60 -- (The PBTE Module E-7 deals with both aspects)"

"#26 Is 'simulation' intended? #38 Can one demonstrate concepts? #72 I feel a conflict of answer between 'service to' and 'maintain liaison.' Would recommend 2 statements."

"Added and emphasized in the category of instructional evaluation should be: training and understanding of basic statistics of a sufficient degree to afford ease of practical application in evaluation strategies."

"Program Planning. Teachers should be involved -- the word 'assist' added to the statements would change the degree of competency to at least a 3 for 1-5"

2. Are there any other suggestions you would make with regard to modifying the overall assessment instrument?

"I found it quite easy to respond to."

"Too many questions. Some appear redundent, repetative, repeat themselves, etc. etc. etc. Questionnaire is difficult to read--spacing crowded. Altho number of questions may be necessary, make it easier on respondent."

"Not any one teacher needs all the competencies listed in the survey. Example item J - 91-101. Only if a teacher were assigned to a coop program would these items be maximized--"

"Some items clearly irrelevant for beginning teachers --e.g. Program Development responsibility, or supervising student teachers"

"No -- I used this instrument before -- there should be a stronger statement on knowledge of subject matter and 3 yr. work experience for voc. ed."

"Yes, program planning, budgeting, and community surveys are a joint responsibility shared with the teacher, an advisory committee, and school administrators. A question should be included concerning the new teachers role in balancing his/her input with advice and directives from these other sources."

"All the competencies you have are real important but so many to be covered"

"I feel great conflict in determining competencies needed for urban areas and rural areas in the same document. A rural teacher must do many things not required (or even encouraged) of a beginning vocational teacher in an urban district. Coordination responsibilities, for instance, might be p[illegible]ent for rural but not urban."

"Put it in machine readable format (if you have many of them)"

"Modification -- application for small school needs versus metropolitan dist. needs. Pre-service needs will differ. The small school voc. tchr. will have to do things that consultants and Directors do in large districts"

3. Do you have any suggestions with regard to a procedure for yearly update of the competencies?

"Annual review by profession, consumers, and students."

"Ask those who must go by it or use it -- 'teacher'"

"Yes, certificate renewal should be contingent on expanding of leadership skills, expanded responsibilities in teacher education, and increased administrative skills"

"Would like to see them utilized rather than just do them"

"What do you mean? Does it have to be yearly? Is this necessary? College experience per se, is the worst place. O.J.T. and internships -- 'guided experience' is better."

"Perhaps in the way of a conference to discuss changes"

"Inservice on subject matter update"

"Perhaps a very small workshop group of experienced teachers and vocationally-oriented administrators together with a consultant could do the job. Both urban and rural should be represented."

"I wouldn't worry too much about updating teaching competencies. It's the upgrading of technical teaching content that is difficult to arrange."

4. Other comments or suggestions you would like to make:

"In planning preservice training for beginning teachers, it might be appropriate to allow some flexibility regarding high priority competencies to allow for some differences in needs among various occupational areas, e.g. 'Demonstrate a Manipulative Skill' might be critical for a T&I teacher while 'Present Information through an Illustrated Talk' may be critical for a D.E. teacher."

"Whether we like to admit it or not, there is a difference between Alaskan urban needs and rural needs. Definately in the level of competency required (degree of competence). Questionnaire needs to reflect this."

"Hopefully the univ. are involved to incorporate these studies into their programs."

"For Alaska -- I feel the need to prepare bush teachers with a separate set of skills -- to be able to teach in multi-areas -- especially in skill development -- Ag -- Home Ec -- Indus. Ed -- Bus Ed -- to be able to teach basic fundamental skills in those areas where voc. teachers cannot be hired for each position."

"Vocational Teachers should have a strong trades background in their field. I would not not like to be operated on by someone who has not been a surgeon."

"While all of the competencies listed are probably important the beginning teacher will need to rely heavily on community input and administrative support. Harmonizing the input from students, the community, and school administrators is the big challenge."

"Combine some"

"Good coverage of competencies"

"Section J. Are state guidelines available? #91."

"It is too bad this effort is confined only to voc. ed. Many, if not all of the competencies and concepts inherent in this survey are as applicable and appropriate on the broadest possible interpretation of teaching activities."

A-4

Vocational Teachers Job Description*

Vocational teachers are responsible for teaching students, but the responsibility goes far beyond disseminating information. As a highly trained professional, the vocational teacher has the following duties:

(a) Teaching skills, knowledges and attitudes which are relevant to the job or cluster of jobs for which the program is directed.

(b) Using appropriate teaching methods and standards which are relevant to the job market.

(c) Reviewing, reassessing, and developing curriculum consistent with that used on the job.

(d) Recommending the purchase of up-to-date equipment consistent with that used on the job.

(e) Participating in professional meetings, in-service workshops, planning sessions, State task forces, and other professional activities.

(f) Meeting with community groups and vocational advisory committee members in promoting and interpreting vocational education.

(g) Developing youth leadership skills. This is normally developed through vocational clubs such as DECA (Distributive Education Clubs of America).

(h) Assuming the departmental tasks and duties assigned by the department head or vocational director such as enrollment and accomplishment reports.

These responsibilities are an integral part of a professional teacher's duties. Essentially, assuming these duties (rather than experience or education level) make the difference between a vocational teacher and a teacher aide.

Minimum Qualifications

Each public school vocational program instructor must hold a valid secondary (grades 10-12) teacher's certificate with a vocational endorsement in order to receive program reimbursement.

Preferably the vocational educator should have specific preparation in the broad field of vocational education and/or collegiate training in the vocational area to be

*Source: Vocational Education State Plan for 1977

taught. To receive program reimbursement, post-secondary and adult instructors teaching in funded vocational courses must be vocationally endorsed.

To secure a vocational endorsement to a regular Type A certificate instructors must have the equivalency of two years (4,000) hours of realted work experience outside the field of education.

Vocational Trades Certificate (Type D)

A vocational trades certificate, valid for two years, may be issued to an applicant to teach in a vocation/technical area unique to the needs of a specific school district who:

(1) has completed four or more calendar years of fulltime work experience in a trade or vocational pursuit for hwich not more than two years of formal training (trade school or technical institute) may be substituted.

(2) has proof of trade experience and verification from all supervisors giving the dates and evaluation of the work experience and if applicable, proof (diploma, etc.) of attendance from all trade schools or technical institutes.

(3) has statement of employment or "intent to employ" from a school district giving the specific teaching assignment.

A vocational trades certificate may be renewed any number of times by submitting a professional development plan plus six semester hours of credit (academic, nonacademic or an equivalent amount of additional training and/or work experience), which must be approved by the commissioner, and proof of employment by a school district in Alaska.

Vocational endorsement for vocational teachers in schools that generate one or two vocational instructional units will be based on the following criteria:

1. Program standards
2. Adequacy of facilities
3. Adequacy of equipment
4. Competency workshop attendance by teacher
5. Evaluation of vocational program

Each school will be considered on an individual basis according to the number and the type of program being offered.

Program must be well planned in terms of standards and curriculum.

Facilities and equipment must be appropriate for the type of vocational programs being planned.

In situations where the teacher lacks specific background for the vocational program, workshops or courses may be required to develop the competencies.

Post evaluation of the program will be done annually to determine the appropriateness of the program for serving the needs of the community.

Two types of endorsements for Home Economics Teachers are;

(1) Vocational Home Economics issued to one who has completed an approved program with a major in home economics education for consumer and home-making instructors. They are eligible for the Type A vocational endorsement without work experience.

(2) Vocational Home Economics (occupational) issued to one who meets the requirements for Vocational Home Economics certification and has at least two (2) years of occupational experience in related area outside the field of teaching.

Teacher Aides

Differential staffing are enlisting an increasing number of teacher aides. Their duties relate primarily to the routine of classroom instruction.

(a) Attending to the physical condition of the room.

(b) Checking roll and the seating of students in preparation for the method of instruction.

(c) Attending to administrative chores such as announcements and absentees.

(d) Performing chalkboard routines such as cleaning board and erasures and placement of materials on the board.

(e) Chekcing homework and other assignments as well as recording th work.

(f) Organizing, distributing, and collecting instructional materials.

Many teachers enlist student volumteers to perform the above activities which frees them to spend more time planning, diagnosing learning problems, assisting students individually, prescribing alternative materials and evaluating.

A-5

Vocational Administrative Job Description*

Local School administrators will have the responsibility for the conduct and administration of vocational education programs within their jurisdiction. They shall have valid Alaska teaching and/or administrative certificates for the positions they hold.

Local Vocational Administrator (or Director)

The actual administrative rank of the vocational administrator is influenced by several factors such as the size of the school system and the ranks assigned to others with similar responsibilities. However, he must have ready access to attention of the superintendent in all matters relating to the vocational program if he is to be effective.

Duties:

(a) Work with vocational staff, advisory committee, and other administrative staff in the planning, promoting, supervision, and evaluation of the program.

(b) Take the initiative in conducting continuous studies of training needs, in revising and improving curriculums, instructional materials and methods and in providing teacher in-service.

(c) Recruit, recommend and train vocational staff members.

(d) Understand the financial aspects of the program and the sources of funds which support it.

(e) Become an acknowledged leader and advisor in the field of occupational education within the school system and in the community.

Specifically, the person has the following responsibilities to the State Department of Education:

(a) Submit the plan of service (long range plan and program applications).

(b) Submit regular reports on enrollment in vocational programs and accomplishments.

(c) Submit enrollment projection.

*Source: Vocational Education State Plan for 1977

(d) Maintain regular placement and follow-up of enrollees trained.

(e) Report results of evaluations of vocational programs.

(f) Submit final financial report on each vocational program (Ref: Appendix 1).

Vocational administration in a small school may become the responsibility of a principal, vice-principal, or vocational teacher on a part-time basis.

Minimum Qualifications

A local supervisor's vocational certificate, valid for five years, may be issued to a local supervisor of vocational education who meets the following requirements:

EDUCATION

Shall meet all requirements of a five-year secondary vocational teaching certificate in any vocational area. This certificate may be renewed by earning six semester hours (not more than one course by correspondence).

A local administrator shall have had professional courses in supervision of instruction, curriculum construction, and organization and administration of vocational education.

EXPERIENCE

Shall have three years vocational teaching experience or two years administrative experince in the field of vocational education or industry. Two years of occupational supervision is allowable as substitute.

A-6

COMPETENCIES IMPORTANT TO SECONDARY AND POST-SECONDARY LOCAL ADMINISTRATORS OF VOCATIONAL EDUCATION

Master List of Categories and Task Statements*

CATEGORY A: Program Planning, Development, and Evaluation

1. Survey student and parent interests.
2. Collect and analyze manpower needs assessment data.
3. Direct occupational task analysis for use in curriculum development.
4. Direct the identification of entry-level requirements for jobs.
5. Involve community representatives in program planning and development.
6. Obtain state and federal services and resources for program development.
7. Cooperate with district, county, regional, and state agencies in developing and operating vocational programs.
8. Prepare annual program plans.
9. Prepare and update long-range program plans.
10. Develop overall vocational program goals.
11. Coordinate district curriculum development efforts.
12. Approve courses of study.
13. Establish school admission and graduation requirements.
14. Recommend program policies to the administration and board.
15. Implement local board and administrative policies.
16. Interpret and apply state and/or federal vocational education legislation.
17. Interpret and apply other relevant state and federal legislation (such as CETA).
18. Develop plans for evaluating instructional programs.
19. Direct self-evaluation of the district vocational programs.
20. Involve external evaluation personnel in assessing program effectiveness.
21. Design and select instruments for evaluating the instructional program.
22. Evaluate the effectiveness of the instructional program.
23. Initiate student and employer follow-up studies.
24. Analyze student and employer follow-up studies.
25. Recommend curriculum revisions based on evaluation data.
26. Assess student testing and grading procedures.
27. Analyze the school's and community's feelings toward educational change.
28. Write proposals for the funding of new programs and the improvement of existing programs.
29. Coordinate local demonstration, pilot, and exemplary programs.
30. Design and oversee local research studies.
31. Interpret and use research results for program development and improvement.
32. Develop supplemental/remedial instructional programs to meet student needs.

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*Taken from *The Identification and National Verification of Competencies Important to Secondary and Post-Secondary Administrators of Vocational Education* by Robert E. Norton, Kristy L. Ross, Gonzalo Garcia, and Barry Hobart. Columbus, OH: The Center for Vocational Education, The Ohio State University, 1977.

CATEGORY B: Instructional Management

33. Establish instructional program entry and completion requirements.
34. Establish student rules and policies (such as attendance and discipline).
35. Enforce student rules and policies.
36. Design and oversee student progress reporting procedures.
37. Prepare a master schedule of course offerings.
38. Guide staff in selecting and using effective instructional strategies (such as individualized instruction).
39. Establish and implement a curriculum design that will achieve the school's instructional goals.
40. Guide staff in integrating and articulating the vocational program with the total educational program.
41. Promote the integration of vocational student organizational activities into the instructional program.
42. Provide for cooperative education programs.
43. Provide for supplemental/remedial instructional programs.
44. Provide for special needs programs.
45. Provide for adult/continuing education programs.
46. Guide the articulation of secondary and postsecondary vocational program objectives.
47. Approve selection of instructional equipment.
48. Approve selection of instructional materials.
49. Maintain a learning resources center for students.

CATEGORY C: Student Services

50. Oversee student recruitment activities.
51. Oversee school admission services.
52. Arrange for work study programs.
53. Oversee student guidance and testing services.
54. Oversee student job placement and follow-up services.
55. Provide for a student record-keeping system.
56. Interpret and apply student rights, laws, and regulations.

CATEGORY D: Personnel Management

57. Prepare and recommend personnel policies.
58. Prepare and maintain a personnel handbook.
59. Assess program staffing requirements.
60. Prepare job descriptions.
61. Establish staff selection and recruitment procedures.
62. Recruit and interview potential staff.
63. Recommend potential staff to the administration and board.
64. Participate in negotiating staff working agreements.
65. Establish staff grievance procedures.
66. Resolve staff grievances and complaints.
67. Interpret the staff benefits program.
68. Counsel and advise staff on professional matters.
69. Schedule staff work loads.

70. Schedule staff leaves, vacations, and sabbaticals.
71. Oversee the work of teachers and other school personnel.
72. Provide for a staff record-keeping system.
73. Plan and conduct staff meetings.
74. Prepare bulletins and other communications designed to keep staff informed.
75. Observe and evaluate staff performance.
76. Recommend staff promotions and dismissals.
77. Provide guidance to the staff on legal matters affecting the school program.
78. Interpret and apply licensing and certification regulations.
79. Interpret and apply labor laws and regulations.
80. Interpret and apply affirmative action laws and regulations.

CATEGORY E: Staff Development

81. Assess staff development needs.
82. Assist in the preparation of individual staff profiles.
83. Counsel with staff regarding personnel development needs and activities.
84. Establish and maintain a staff learning resources center.
85. Conduct workshops and other inservice programs for professional personnel.
86. Arrange for workshops and other inservice programs for professional personnel.
87. Provide for inservice programs for supportive personnel.
88. Provide for preservice programs for professional personnel.
89. Arrange for staff exchanges with business and industry.
90. Evaluate staff development programs.

CATEGORY F: Professional Relations and Self-Development

91. Maintain ethical standards expected of a professional educator.
92. Develop and maintain professional relationships with other administrators.
93. Develop and maintain professional relationships with state department of education personnel.
94. Develop and maintain relationships with personnel in professional organizations.
95. Participate in professional organizations.
96. Participate in professional meetings for self-improvement.
97. Promote professional image through personal appearance and conduct.
98. Assist with the development of state and/or federal plans for vocational education.
99. Participate in the development of vocational education legislation.
100. Prepare policy and commendation statements.
101. Represent teacher interests and concerns to other administrators and the board.
102. Develop effective interpersonal skills.
103. Read and use information from professional journals, reports, and related materials for self-improvement.
104. Apply management by objectives (MBO) techniques to personal work assignments.
105. Develop cooperative problem-solving and decision-making skills.
106. Assess personal performance as an administrator.

CATEGORY G: School-Community Relations

107. Develop a plan for promoting good public relations.
108. Prepare and recommend public relations and communications policies.
109. Coordinate use of occupational (craft) advisory committees.
110. Organize and work with a general vocational advisory council.
111. Develop working relationships with employers and agencies.
112. Prepare and recommend cooperative agreements with other agencies.
113. Involve community leaders (political and non-political) in school programs and activities.
114. Participate in school organizations.
115. Participate in community organizations.
116. Promote good relationships between vocational and general education staff.
117. Encourage staff participation in community civic, service, and social organizations.
118. Promote cooperative efforts of parent and teacher groups.
119. Conduct conferences with individuals relative to the vocational programs.
120. Meet and confer with visitors.
121. Conduct informational programs for the public (such as open house and career awareness programs).
122. Make public presentations on school programs and activities.
123. Conduct public hearings and meetings on school issues.
124. Conduct orientation programs for students and staff.
125. Conduct recognition programs for students, staff, and community supporters.
126. Plan for exhibits and displays
127. Develop materials to promote the vocational programs.
128. Write news releases for school and area media.
129. Obtain and analyze informal feedback about the school.
130. Evaluate the public relations program.
131. Interpret and apply public "right-to-know" laws and regulations.

CATEGORY H: Facilities and Equipment Management

132. Assess the need for physical facilities.
133. Conduct land and facility feasibility studies.
134. Recommend building sites.
135. Recommend the selection of an architect.
136. Oversee architectural planning.
137. Submit facility and equipment specifications.
138. Analyze building and equipment contract bids.
139. Recommend acceptance of new building.
140. Procure equipment and furnishings.
141. Plan space requirements for programs.
142. Assign space according to priority needs.
143. Develop and implement an equipment and supply inventory system.
144. Establish preventive maintenance program for equipment and facilities.

145. Interpret and apply health and safety laws and regulations.

146. Develop and implement safety programs.

147. Establish emergency plans (such as fire and disaster).

148. Establish and oversee a security program.

149. Schedule and oversee community's use of facilities.

150. Develop long-range facility and equipment plans.

151. Prepare and submit renovation and alteration plans.

CATEGORY I: Business and Financial Management

152. Prepare and recommend financial policies.

153. Establish purchasing and payment procedures.

154. Establish receiving and shipping procedures.

155. Prepare and regulate operational budgets.

156. Prepare and regulate program budgets.

157. Prepare and regulate capital improvement budgets.

158. Prepare long-range budgets based on total program requirements.

159. Adopt an appropriate financial accounting system.

160. Analyze the cost of operating various instructional programs.

161. Locate sources of funds for program development and operation.

162. Approve all major expenditures.

163. Approve requisitions and work orders.

164. Determine insurance coverage needs.

165. Respond to business correspondence.

166. Prepare local, state, and federal reports.

A-7

VOCATIONAL TEACHER PROFESSIONAL COMPETENCIES ESSENTIAL TO INSTALLING AND CONDUCTING COMPETENCY-BASED INSTRUCTION

Competency-Based Instruction Project
Glen E. Fardig, Project Director
Joan Jones, Technical Assistant

The Center for Vocational Education
The Ohio State University
1960 Kenny Road
Columbus, Ohio 43210

November 1977

Following is a list of teacher competencies identified as being essential to the installation and management of competency-based vocational instruction in secondary and post-secondary schools. The training of teachers to achieve these competencies is seen as an integral part of a total professional program of vocational teacher education.

The identification of the competencies was accomplished as one phase of the work of a federally-funded program of training for installing competency-based vocational instruction. The identification process included the following major steps:

1. A thorough search was made of the literature of teacher education and competency-based instruction (CBI). The teacher competencies for installing and managing CBI, as implied in the literature, were developed into a tentative list of 22 competency statements.

2. A group of 12 national leaders in competency-based education functioned as a DACUM committee to independently generate a list of 64 teacher competencies. The DACUM approach (Develop A Curriculum) utilizes modified small-group brainstorming techniques resulting in a chart of competencies.

3. The two lists were compared and merged. In this step, teacher educators eliminated redundencies, resolved inconsistencies, and strengthened any incomplete areas in the list.

4. The competency statements were finally refined as to wording, grouped for topical relationships, and organized in an approximate instructional sequence.

The competency statements presented here may be useful for a wide variety of teacher training purposes. They are also designed to fit the needs of a national curriculum development effort in vocational teacher education. As such, they are consistent with, and augment, the 384 performance elements which form the developmental base of The Center's Performance-Based Teacher Education Curricula.

1. Work with the vocational program advisory committee to develop the competency-based program.

2. Assist with support staff development to prepare them for competency-based instruction (CBI).

3. Assist in school-wide curriculum planning and evaluation in implementing CBI.

4. Involve students in planning and evaluation of the competency-based vocational program.

5. Inform staff and administrators about competency-based instruction.

6. Inform referring schools and agencies about competency-based instruction.

7. Orient the community to competency-based instruction.

8. Assist in orienting accrediting personnel to competency-based instruction.

9. Conduct (verify) an occupational task analysis for use in identifying competencies.

10. Establish performance criteria for the occupational competencies.

11. Write terminal performance objectives.

12. Sequence and cluster competencies for instruction.

13. Develop criterion-referenced assessment measures.

14. Establish student performance data-collection procedures.

15. Conduct student performance assessment of occupational competencies.

16. Write enabling instructional objectives.

17. Develop learning activities to deliver on occupational competencies.

18. Develop instructional media materials for specific competencies.

19. Select available competency-based instructional materials.

20. Adapt existing instructional materials to the competency-based program.

21. Revise instructional materials in accordance with student interest and achievement.

22. Estimate time and cost of the competency-based program development process.

23. Participate in the budgeting process.

24. Participate in the cost accounting process.

25. Provide a resource center for competency-based instruction.

26. Develop a management system for the competency-based vocational program.

27. Organize the physical facilities for competency-based instruction.

28. Organize field-based instructional settings.

29. Work with students individually.

30. Help students identify preferred learning styles.

31. Utilize teaching/learning strategies based on student needs.

32. Schedule individual/group learning experiences.

33. Provide for continuous performance feedback to students.

34. Establish a daily CBI progress reporting system for students.

35. Assist with the development and maintenance of the CBI institutional record-keeping/reporting system.

36. Orient students to the competency-based program.

37. Enroll students in the competency-based program.

38. Counsel/advise students in self-assessment of their progress through the CBI program.

39. Assess student progress throughout the CBI program.

40. Provide for the development of competency-based programs unique to individual students needs.

41. Guide students' exit from the program.

42. Assist with collecting and interpreting student follow-up data for program improvement.

43. Involve business and industry in CBI program renewal.

44. Revise the CBI program on the basis of student interest and achievement.

45. Implement a personal program of professional development in the area of competency-based instruction.

A preliminary review of the identified teacher competencies has been made for the purpose of clustering them into instructional modules. Using the format and structure of The Center's Performance-Based Teacher Education Materials, 12 modules would need to be developed to deliver on all 45 competencies. A tentative listing of the module titles follows.

Module 1 Develop Plans for Implementing Competency-Based Instruction in your Vocational Program

Module 2 Orient the School and Community to Competency-Based Instruction

Module 3 Specify Occupational Competencies Desired of Students

Module 4 Assess Student Performance in a Competency-Based Program

Module 5 Provide Competency-Based Instructional Materials

Module 6 Manage Resource Requirements for Competency-Based Instruction

Module 7 Organize the Vocational Program to Install Competency-Based Instruction

Module 8 Manage the Learning Environment

Module 9 Maintain a Record-Keeping System

Module 10 Orient Students to the Competency-Based Program

Module 11 Guide Students Through the Competency-Based Program

Module 12 Evaluate Program Effectiveness for Improvement

Minnesota Research and Development Center
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REVIEW OF STAFF DEVELOPMENT RESEARCH, 1975-78

Conducted by the Minnesota Research and Development Center for Vocational Education

1975-77 STAFF DEVELOPMENT RESEARCH

During the past several years, there has been an increasing interest in developing competency-based vocational teacher education, but little emphasis has been directed at systematically identifying the staff development needs of vocational teachers on the local or state levels. A primary problem is the lack of reliable and valid instruments designed specifically to assist vocational educators in identifying their current professional development needs and assessing their current teaching performance.

From 1975 to 1977 the Minnesota Research and Development Center for Vocational Education conducted a pilot project to develop a staff development system including (1) needs assessment and evaluation of instruction instruments, (2) computerized feedback, and (3) a teacher handbook for interpreting the computerized feedback. This pilot project was conducted in Minnesota with the assistance of four post-secondary Area Vocational Technical Institutes and five Secondary Vocational Centers. Approximately 275 teachers, 4,000 students, and 35 supervisors participated in the pilot study. The Professional Needs Assessment and Evaluation of Instruction instruments were shown to have very adequate reliabilities for the Minnesota participants. Indications of validity and utility were also obtained.

1977-78 NATIONAL STAFF DEVELOPMENT PROJECT

During 1977-78 the U.S. Office of Education funded a research project designed to determine if the needs assessment system developed during the past two years in Minnesota is useful, reliable, and valid for vocational education staff in other states. Product outcomes of this project will include (1) Professional Needs Assessment instruments, (2) Evaluation of Instruction instruments, (3) computer programs that generate four types of feedback reports, and (4) four Planning Resource Guides designed to assist teachers, supervisors, administrators and other local and state personnel in (a) interpreting their computerized feedback and (b) developing a personal plan for professional development.

Population

The participants in this research project included approximately seven schools in each of three states: Kentucky, Virginia, and Wisconsin. The total number of subjects involved was approximately 450 teachers, 8,000 students, and 65 supervisors (department chairperson, lead instructor). Both secondary and post-secondary vocational education programs were involved.

Instruments

A total of seven instruments were administered. The set of *Professional Needs Assessment* instruments includes (1) a teacher self-assessment form, (2) a supervisor form, and (3) a student form. The set of *Evaluation of Instruction*

instruments also includes (1) a teacher self-rating form, (2) a supervisor form, and (3) a student form. In addition to these six instruments, a *Background Information* form was administered to obtain basic biographical data on teachers and supervisors. Both reliability and validity will be investigated in terms of the population involved.

Feedback Reports

The main purpose of this research effort is to provide information to teachers, supervisors, administrators, staff development personnel, and teacher educators that will be helpful in developing professional development plans. Therefore, four types of feedback reports have been developed. Report 1: A Teacher's Feedback Guide; Report 2: A Supervisor's Feedback Guide; Report 3: Vocational Area Feedback Guide; and Report 4: School Feedback Guide.

The feedback reports are designed to assist teachers, local and state personnel, and teacher educators in identifying areas where improvement is needed and developing an improvement plan. The feedback reports provide the following information:

Report 1: A Teacher's Feedback Guide. This report contains the teacher's self-ratings and average student responses for each class of students completing the forms. Average student, teacher, and supervisor responses are given for the teacher's school. *A teacher does not receive his/her supervisor's rating.*

Report 2: A Supervisor's Feedback Guide. This report contains an individual supervisor's rating of each teacher he/she supervises and the average student, teacher, and supervisor rating of the teachers for whom a given supervisor is responsible. *A supervisor does not receive any teacher self-ratings.*

Report 3: Vocational Area Feedback Guide. This report provides average student, teacher, and supervisor ratings for the teachers in each vocational area in a school and in a state. It can be used by anyone responsible for staff development for a given vocational area.

Report 4: School Feedback Guide. This report provides average student, teacher, and supervisor ratings for a specific school and state. This report can be used by administrators, staff development personnel, teacher educators, or anyone responsible for staff development within a school system.

For further information, contact Deena Allen, Ron Dreyer, or Brandon Smith at the following address:

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149 Pillsbury Drive S.E.
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(Phone: 612/376-3538)

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NUMBER OF TEACHERS BY VOCATIONAL ASSIGNMENT

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
OFFICE OF EDUCATION
WASHINGTON, D.C. 20202

NUMBER OF TEACHERS, STATUS OF TEACHER TRAINING, AND LOCAL ADMINISTRATIVE STAFF IN VOCATIONAL EDUCATION

(Vocational Education Amendments of 1968, Public Law 90-576)

READ INSTRUCTIONS ON REVERSE BEFORE COMPLETING THIS FORM

FORM APPROVED
O.M.B. NO. 51-R1142

STATE OUTLYING AREA	DATE PREPARED
FISCAL YEAR ENDING: June 30, 1976	REPORT DUE: October 1, 1976

SECTION I - NUMBER OF TEACHERS BY VOCATIONAL ASSIGNMENT REPORTED AS FULL-TIME EQUIVALENTS AND STATUS OF TEACHER TRAINING

VOCATIONAL PROGRAMS	UNDUPLICATED	NUMBER OF TEACHERS				NUMBER OF ENROLLEES IN TEACHER TRAINING		NUMBER COMPLETING STATE PLAN REQUIREMENT	
		SECONDARY	POST-SECONDARY	ADULT					
		F.T.E.	F.T.E.	FULL-TIME	PART-TIME	PRESERVICE	INSERVICE	PRESERVICE	INSERVICE
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
1. TOTAL UNDUPLICATED	772	507	107	29	129	6	638	1	33
2. AGRICULTURE	1	1	0		0	0	1	0	0
3. DISTRIBUTION	18	11	1		6	0	8	0	4
4. HEALTH	20		17		3	0	8	0	0
5. CONSUMER AND HOMEMAKING	127	102	3	2	20	6	122	1	2
6. OCCUPATIONAL PREPARATION HOME ECONOMICS	25	13	10	2	0	0	25	0	0
7. OFFICE	263	171	30	14	48	0	241	0	14
8. TECHNICAL	75	0	37	6	32	0	57	0	0
9. TRADES AND INDUSTRY	243	209	9	5	20	0	176	0	13
10. GROUP GUIDANCE (prevocational)	0	0	0	0	0	0	0	0	0
11. PRE-POSTSECONDARY	0	0	0			0	0	0	0
12. REMEDIAL	0	0	0	0	0	0	0	0	0
13. COOPERATIVE, PART G	(39)	(31)	(8)			(0)	(35)	(0)	(16)
14. DISADVANTAGED	(100)	(67)	(19)	(2)	(12)	(0)	(18)	(0)	(9)
15. HANDICAPPED	(11)	(5)	(3)	(0)	(3)	(0)	(11)	(0)	(9)
16. EXEMPLARY, PART D	(5)	(5)	(0)	(0)	(0)		(0)		(0)
17. OTHER (specify)									

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Source: Vocational Education Five Year Plan

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PROJECTION OF THE STATE'S ENROLLMENT IN

VOCATIONAL PROGRAMS

FY1978 - 1982**

OE Code	Occupational Programs Program	(Actual)* FY1976	FY1977	FY1978	FY1979	FY1980	FY1981	FY1982
01.	Agriculture	74	174	188	219	250	280	313
04.	Distribution	2,835	2,835	2,977	3,471	3,964	4,440	4,968
07.	Health	483	483	507	591	675	756	846
09.02	Occupational Home Economics	1,049	1,049	1,101	1,284	1,466	1,642	1,837
14.	Office	14,012	14,012	14,713	17,155	19,591	21,942	24,553
16.	Technical	555	555	583	679	775	868	971
17.	Trades and Industry	10,624	10,624	11,116	12,961	14,801	16,577	18,550
Level of Instruction:								
Secondary		25,474	25,474	26,748	31,188	35,617	39,891	44,638
Postsecondary		2,112	2,112	2,218	2,586	2,953	3,307	3,701
Adult								
	Preparatory	816	816	857	999	1,141	1,278	1,430
	Apprenticeship	1,332	1,332	1,399	1,469	1,678	1,879	2,103
Enrollments in Special Programs (all levels)								
	Disadvantaged	65	65	68	79	90	101	113
	Cooperative	1,267	1,267	1,330	1,551	1,771	1,983	2,219
	Work-study	66	66	69	80	91	102	114
	Depressed Areas	1,803	1,803	1,893	2,207	2,520	2,822	3,158
Enrollments of Persons with Special Needs (all levels, all programs)								
	Disadvantaged	6,924	6,924	7,270	8,477	9,681	10,843	12,133
	Handicapped	2,765	2,765	1,903	3,385	3,866	4,330	4,845

*From Alaska DOE report for FY1976 to D/HEW. Projections for FY 1978 - FY1982 are based on estimated annual percentage increases in Federal and State/Local funding. FY1977 is estimated the same as FY1976, because funding levels were about the same.

**Source: Alaska Vocational Education Five Year Plan (78-82)

AVERAGE ANNUAL EMPLOYMENT BY OCCUPATION
ALASKA *

OCCUPATION	1974 EMPLOYMENT	1977 EMPLOYMENT	1978 EMPLOYMENT	1985 EMPLOYMENT	AVG. ANNUAL JOB OPENINGS, 1974-85
Total all occupations	134,720	166,730	177,400	252,100	16,920
PROFESSIONAL & TECHNICAL	23,950	30,400	32,550	47,590	3,170
Engineers	2,290	3,000	3,220	4,850	280
Civil Engineers	1,160	1,555	1,685	2,590	150
Electrical Engineers	310	380	400	575	30
Life & Physical Scientists	1,140	1,300	1,340	1,710	75
Geologists	450	500	520	640	20
Engineering, Science Tech.	2,450	3,160	3,400	5,035	300
Drafters	600	930	1,050	1,840	150
Elec., Electronic Tech.	980	1,020	1,030	1,110	20
Surveyors	350	500	550	900	50
Med. Workers, exc. Tech.	1,840	2,520	2,750	4,340	360
Phys., MD Osteopaths	350	470	510	800	50
Registered Nurses	1,075	1,480	1,625	2,580	240
Hlth. Technologists & Tech	490	720	800	1,350	130
Tech., exc. health	2,110	2,660	2,840	4,120	230
Air Traffic Controllers	650	655	659	745	20
Computer Specialists	370	530	585	960	60
Writers, Arts., Entertainers	1,460	1,750	1,840	2,500	165
All other Prof. & Tech.	11,800	14,760	15,775	22,725	1,570
Accountants	1,500	1,800	1,900	2,620	180
Architects	340	450	490	750	40
Clergy	450	460	460	475	13
Judges	55	64	66	100	20
Lawyers	565	830	920	1,530	100
Librarians	265	340	370	550	50
Personnel Labor Rel.	730	955	1,080	1,550	100
Social Workers	560	740	800	1,220	90
Voc. Ed. Counselors	290	450	500	880	80
MANAGERS & OFFICERS	19,550	23,790	25,200	35,090	2,080
Buyers, Sales, Loan Manager	2,880	3,675	3,940	5,800	370
Bank, Financial Man.	930	1,125	1,190	1,655	100
Sales Man., Retail Trade	660	860	930	1,400	90
Sales Man., exc. Ret. Trd.	250	315	340	500	30
Administrators & Pub. Insp.	4,000	4,800	4,980	7,240	370
Health Admin.	360	440	460	650	40
Pub. Insp., Const.	95	118	121	190	10
Pub. Insp., exc. Const.	337	372	382	424	25
Pub. Off. & Admin.	2,794	3,307	3,441	5,080	280
Postmaster & Mail Super.	220	210	205	180	1
All Other Managers	12,670	15,315	16,280	22,050	1,040
Railroad Conductors	48	48	50	50	1
Rest., Cafe & Bar Man.	830	1,020	1,090	1,530	110
Bldg. Manager & Super.	225	280	300	440	30
Ship Off, Pilots or Pursers	410	540	580	875	60

*Alaska Department of Labor, Alaska Annual Planning Report, Research and Analysis section. June, 1976.

OCCUPATION	1974 EMPLOYMENT	1977 EMPLOYMENT	1978 EMPLOYMENT	1985 EMPLOYMENT	AVG. ANNUAL JOB OPENINGS, 1974-85
SALES	6,070	7,500	7,970	11,300	820
Ins. Agents, Brokers, etc.	330	385	400	535	30
Real Est. Agt, Brkrs, etc.	515	570	590	720	40
Stock and Bond Sales Agents	200	300	340	600	50
CLERICAL	23,370	30,280	32,580	48,700	4,280
Sten., Typists & Sec.	7,240	9,825	10,680	16,710	1,645
Legal Sec.	360	600	675	1,220	140
Medical Sec.	110	150	170	260	30
Stenographers	160	170	170	180	10
Typists	1,830	2,450	2,650	4,100	410
Office Machine Operators	555	655	680	900	75
Comp., Peripheral Equip.	190	245	265	400	32
Keypunch Operators	220	240	245	290	25
Other Clerical Workers	15,580	19,800	21,215	31,080	2,555
Bank Tellers	540	620	650	850	90
Billing Clerks	270	345	370	555	55
Bookkeepers	3,020	3,600	3,800	5,150	400
Cashiers	1,530	1,910	2,040	2,930	255
Clerical Superv., nec.	420	480	500	640	30
Collectors, Bill & Acct.	165	210	225	330	35
Counter Clks, exc. Food	580	715	760	1,070	95
Dispatcher, Starter, Vehc	185	260	290	470	40
Expeditors, Prod Contro.	270	330	350	485	30
File Clerks	300	370	390	530	45
Ins. Adj., Examiners	85	100	110	145	10
Lib. Attendants, Asst.	150	200	215	330	35
Mail Carriers, P.O.	600	770	774	780	41
Mail Handler, exc P.O.	200	260	280	430	40
Payroll, Timekeeping Clk	300	400	440	680	60
Postal Clerks	347	347	349	352	17
Receptionists	670	890	970	1,500	155
Shipping, Rec. Clks	245	330	360	560	40
Statistical Clerks	420	570	620	970	75
Stock Clks, Storekeepers	950	1,160	1,230	1,730	115
Telephone Operators	630	730	760	980	90
CRAFTS, OPERATIVES, LABORERS	43,190	50,500	52,930	70,000	3,450
Construction Crafts	11,600	13,520	14,150	18,610	935
Carpenters & Apprentices	3,020	3,300	3,400	4,050	180
Brick & Stnmasons & App	80	85	85	90	2
Bulldozer Operators	675	875	945	1,400	100
Cement & Concrete Fin.	60	65	65	75	1
Elec. & Apprentices	1,045	1,150	1,180	1,430	55
Excav, Grad, Mach Oper.	2,180	2,880	3,110	4,735	280
Painters & Apprentices	550	580	590	660	30
Roofer and Slaters	90	95	100	120	3
Structural Metalcrft Wkr	365	400	410	490	20

OCCUPATION	1974 EMPLOYMENT	1977 EMPLOYMENT	1978 EMPLOYMENT	1985 EMPLOYMENT	85 AVG. ANNUAL JOB OPENINGS, 1974-85
Metal Wrkg Craft Wkrs	615	760	815	1,160	70
Machinists & App.	230	300	325	490	30
Millwrights	240	300	315	450	25
Mech, Repairers & Installers	5,960	7,420	7,900	11,320	620
A/C, Heating, Refrig Mech	315	440	480	775	60
Auto Body Repairers	250	280	290	360	15
Auto Mech & App	1,615	2,040	2,180	3,190	180
Hvy Equip Mech, inc Diesel	1,945	2,320	2,445	3,325	170
Household Appl Mech	175	215	230	325	16
Office Mach Repairers	90	130	150	250	17
Radio, TV Repairers	335	430	460	680	35
Printing Trade Craft Wkrs	140	160	165	200	11
Trans, Public Utilities	1,225	1,430	1,500	1,970	80
Elect Pwrline Inst. & Rep	280	320	330	415	15
Locomotive Engineers	35	35	35	36	1
Power Station Oper	160	165	170	180	4
Tele Installers, Repair	590	725	770	1,080	50
Tele Line Instal, Splicers	165	185	190	240	10
Other Crafts, Kindred Wkrs.	2,030	2,375	2,490	3,300	160
Bakers	230	260	270	340	20
Cabinet Makers	55	60	65	80	5
Carpet Installers	100	120	125	170	7
Crane, Derrick & Hoist Op	340	420	450	635	30
Dental Laboratory Tech	55	55	55	58	3
Stationary Engineers	490	530	540	630	20
Operatives	12,725	14,650	15,290	19,780	960
Semiskilled Metalwkg	745	870	900	1,190	50
Welders & Flamecutters	735	855	895	1,170	50
Other Operatives	7,800	8,560	8,825	10,600	475
Assemblers	75	100	110	170	12
Bottling, Canning Op	840	880	890	980	50
Cltnng Ironers & Press.	90	85	80	70	2
Drillers, Earth	470	500	510	585	15
Dry Wall Instl, Lathes	250	250	255	265	10
Gar Wkrs, Gas Sta Att	525	620	655	880	40
Lndry, Dry Clning Op nec	410	470	490	630	40
Meat Cut, Butch, exc Mfg	260	300	325	440	20
Meat Cutters, Butchers	240	245	245	260	5
Mixing Operatives	60	65	65	70	1
Oil, Greasers, exc auto	220	230	240	260	10
Photo Proc Workers	75	100	110	170	15
Sailors & Deckhands	340	440	470	700	40
Sawyers	44	48	50	62	3
Transport Equip Oper	4,180	5,220	5,565	7,990	435
Bus Drivers	550	788	866	1,420	100
Delvry & Rt Workers	910	1,130	1,200	1,720	90
Fork Lift, Tow Mtr Oper	355	415	435	580	30
Railroad Brake Oper	55	60	60	75	2
Taxicab Dr, Chauffeurs	375	500	540	830	60
Truck Drivers	1,875	2,265	2,395	3,305	150

OCCUPATION	1974 EMPLOYMENT	1977 EMPLOYMENT	1978 EMPLOYMENT	1985 EMPLOYMENT	AVG. ANNUAL JOB OPENINGS, 1974-8
Laborers, exc Farm	8,900	10,190	10,620	13,640	610
Animal Caretakers	400	570	630	1,030	90
Carpenters Helpers	170	300	330	545	25
Const Labor, exc Carp Help	2,100	2,340	2,420	3,000	120
Frght, Material Handlers	1,040	1,225	1,285	1,710	75
Garbage Collectors	130	175	190	300	20
Gardeners, Groundkeepers	270	340	360	530	30
Longshr Wkrs, Stevedores	300	425	470	770	50
SERVICE	18,225	23,930	25,830	39,140	3,120
Cleaning Serv Workers	4,340	5,800	6,300	9,700	760
Janitors & Sextons	2,850	3,680	3,960	5,890	420
Food Service Workers	6,810	8,860	9,545	14,330	1,150
Bartenders	890	1,140	1,225	1,820	120
Cooks	2,130	2,815	3,040	4,630	370
Dishwashers	375	460	490	690	40
Food Cnter, Fountain Wkr	515	690	750	1,160	100
Waiters	2,000	2,620	2,830	4,275	400
Health Service Workers	1,470	2,330	2,615	4,620	460
Dental Assistants	150	220	240	400	40
Nurses Aides, Orderlies	675	1,070	1,200	2,120	200
Practical Nurses	510	840	950	1,730	190
Personal Service Workers	2,330	2,980	3,200	4,700	400
Child Care Wkr, exc Priv	880	1,300	1,456	2,440	240
Housekeepers	300	340	360	480	30
Protective & Service Workers	2,190	2,940	3,180	4,900	310
Firefighters	600	770	830	1,230	65
Guards	745	890	940	1,280	85
Police & Detectives	840	1,260	1,400	2,380	160